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I. THE FOREIGN JOURNALS.

ANATOMY AND PHYSIOLOGY.

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PART FIRST.

Analytical and Critical Reviews.

Art. I.

1. *A Treatise on Insanity, and other Disorders affecting the Mind.* By JAMES COWLES PRICHARD, M.D. F.R.S., &c. &c.—*London*, 1835. 8vo. pp. 483.

2. *Des Maladies Mentales considérées sous les Rapports Médical, Hygiènique, et Médico-légal.* Par E. ESQUIROL, Médecin en chef de la Maison Royale des Aliénés de Charenton, &c. &c. *Accompagnées de 27 Planches gravées.*—*Paris*, 1838. Tomes ii.—8vo. pp. 676, 864.
Mental Maladies considered in relation to Medicine, Hygiène, and Medical Jurisprudence. By E. ESQUIROL, &c. &c.

3. *Essay on the Classification of the Insane.* By M. ALLEN, M.D. &c. —*London, no date.* 8vo. pp. 212; *with Plates.*

4. *A Treatise on the Nature, Symptoms, Causes, and Treatment of Insanity; with Practical Observations on Lunatic Asylums, and a Description of the Pauper Lunatic Asylum for the County of Middlesex, at Hanwell, with a detailed Account of its Management.* By Sir W. C. ELLIS, M.D., Resident Medical Superintendent, and formerly of the Asylum at Wakefield.—*London*, 1838. 8vo. pp. 344.

5. *Delle Malattie della Mente, ovvero delle diverse Specie di Follie.* Opera di LUIGI FERRARESE, Dottor di Medicina, &c.—*Napoli*, 1830 and 1832. Two Vols. 8vo. pp. 220, 112.
Of Maladies of the Mind, or the different Species of Madness. By LUIGI FERRARESE, M.D. &c.

6. *Tenth Report of the Directors of the Connecticut Retreat for the Insane.*—1834.

7. *Report of the Lunatic Asylum in St. Petersburgh.*—1834.

8. *Saggio sulla Statistica Medica della Real Casa dei Matti di Palermo.* Scritto da ANTONIO GRECO, Medico ordinario della sudetta Real Casa dei Matti, &c.—*Palermo*, 1835. 8vo. pp. 24.
Medical Statistics of the Royal Institution for the Insane at Palermo. By A. GRECO, Physician in Ordinary, &c.

9. *State of the New-York Hospital, and Bloomingdale Asylum.*—1835 and 1836.

10. *Sixteenth and Eighteenth Report of the Directors of the Dundee Lunatic Asylum.*—1836 and 1838.

11. *State of an Institution near York, called The Retreat, for Persons afflicted with Disorders of the Mind.*—1836.

12. *Reports and other Documents relating to the State Lunatic Hospital at Worcester, Mass. Printed by order of the Senate.*—1837.

13. *The Forty-fourth Report of the Visiting Justices, and the Seventh Report of the Resident Physician and Treasurer of the Middlesex Pauper Lunatic Asylum.*—1837.

14. *Physician's Report to the Managers of the Lunatic Asylum of Aberdeen.*—1838.

15. *On the Statistics of English Lunatic Asylums, and the Reform of their Public Management.* By William Farr.—*London, no date.* 8vo. pp. 46.

16. *Observations on the Management of Madhouses; illustrated by Occurrences in the West-Riding and Middlesex Asylums.* By Caleb Crowther, m.d., formerly Senior Physician to the West-Riding Pauper Lunatic Asylum.—*London*, 1838. 8vo. pp. 145.

The number of publications which have reached us relative to the subject of insanity, since the commencement of the present year, attest that the important class of maladies of which they treat is attracting increased attention; whilst the contents of some of them sufficiently show that there are yet many circumstances requiring better consideration, by which the welfare of lunatics is materially affected. It would require an article extending beyond all reasonable limits to do complete justice to the various treatises and reports of which we have quoted the titles; but we may, perhaps, serviceably attempt to condense and comment upon some of the most important facts and opinions which these numerous works contain.

Independently of the many interesting questions involved in this subject respecting the nature of insanity, and the signs of its actual presence, the practical consideration of its actual management in a mere medicinal sense has scarcely, we think, sufficiently engaged the attention of the profession. Every one acquainted with the details of private practice must know that there are no cases which occasion more perplexity and alarm, and eventually lead to greater practical improprieties, than the various forms of disordered mind. The artificial definitions of mental philosophers have done little more than produce confusion; the demonstrations of morbid anatomists have sometimes shown irremediable changes, and sometimes no changes which satisfactorily explained the phenomena which preceded death; and the practice set forth in books has been often capricious and often empirical. Accustomed to subdue acute diseases by prompt and definite measures, and to control, if not to cure, chronic affections by intelligible indications, the practitioner shuns as much as possible the responsibility of a class of cases in which excitement resists all ordinary methods of reduction, or depression is obstinate

under every stimulus; whilst all the offensive peculiarities of lunacy, and the fears of friends, and the accusations of the unfriendly, and various distresses incidental to cases of insanity, combine to render him impatient of his charge, and glad to surrender it, in any way, to any one who will undertake what he deems a thankless, or even a disgusting office.

In a former Number of this Journal we inserted an account of the first public attempt on record to liberate maniacs from chains and dungeons; (Vol 1) an act of heroism at the time, as well as of philanthropy, for which Pinel deserved a statue. Openly barbarous plans of treatment are now so uncommon, that a superficial observation might lead to the conclusion that everything was accomplished that humanity could desire or skill could suggest. Numerous establishments exist for the reception of the insane, and many of them are conducted by persons incapable of unnecessary harshness, and only known for their honorable and humane care of those intrusted to them. Some of our public institutions are in certain respects models of excellent management; and successive acts of the legislature have at least had for their object that of throwing efficient protection around the insane of every class of society.

To these admissions we are constrained to add, that the theories of insanity entertained, and occasionally uttered, by medical men are vague and ill considered; that the practice of medicine in mental disorders is unsettled; and that, where the will exists on the part of relatives, much injustice may yet be committed, and with complete impunity. Every one knows how little value is attached to the evidence of medical men in cases of lunacy, on account of the wild and fanciful notions which they often bring into court with them. In common practice, if insanity declares itself, and resists bleeding, blistering, and purging, all the anxiety of the practitioner is to get the patient out of his hands, and to send him no matter where, so that he sees no more of him: and we can ourselves testify, from personal observation, that a nervous patient may be taken from the practitioner who has been in attendance, dragged under the most unfavorable circumstances before another, sentenced to confinement among lunatics, and placed beyond the possible means of immediate liberation. The selfish keeper of a common lunatic-house laughs at attempts to deprive him of a patient. Provided that the letter of the law is complied with as regards the certificates, he cares not how irregularly those certificates have been obtained; and those only who have made a formal remonstrance know with what reluctance the magistrates move, and that the visiting physicians for the county will not stir, and that lord chancellors will not or cannot listen to any appeal. The metropolitan commissioners will be found ready, we sincerely believe, at all times, to do all in their power; but that amounts, in many cases, to nothing: they will, at the utmost, request the magistrates to institute an enquiry; which those magistrates will do, most probably, in presence of the keeper of the lunatic-house, and thus baffle all interference. Such facts have taken place under our own observation, and we fear they are far from uncommon.

When it is also recollected that lunatic asylums were the scenes of incredible barbarity, until the public indignation purged them; when the secrecy with which the proceedings of the commissioners of lunacy are conducted is reflected upon, (necessary, perhaps, in some degree, but

open to abuse;) and when it is remembered that the relatives of lunatics seldom hail their restoration to health with gratitude, but, as Mr. Farr expresses it, welcome "the lunatic's return to his senses as ruefully as would a prodigal heir the resurrection of his grandfather;" we find abundant reasons for bringing the subject before the attention of the profession and the public again and again.

Those who feel strongly upon this subject may sometimes be suspected of making exaggerated statements; but let any one look into the past records of York and of Bethlem, and he will find how possible it is for every enormity to be sheltered under the sanction of all that the world calls respectable. These evils were general. The reports of travellers respecting the past state of the asylums of Scotland, of France, of Italy, are appalling; and the documents (obligingly forwarded to us by Dr. Woodward) relative to the past and present condition of the State Lunatic Hospital of Worcester, Massachusetts, give the same testimony of former incredible neglect, now happily superseded by all that skill and humanity can suggest.

M. Esquirol's work is composed of several treatises published at different periods, and now collected into two volumes, in not the best order, as it seems to us; although every treatise and every page published by so able a physician, after forty years' experience, contains something to interest or instruct the medical reader. The section with which the first volume commences, entitled *de la Folie*, comprises numerous facts and statements to which we shall find further occasion to refer. Of those on Hallucinations and Illusions we may observe the same. To these succeed, in the same volume, treatises or essays on Puerperal Insanity, Epilepsy, and Melancholia (*Lypémanie*), Demonomania, and Suicide. In the second volume, M. Esquirol treats of Monomania, Mania, Dementia, and Idiocy; five Statistical and Hygienic Memoirs follow; and three on Insanity considered in its medico-legal relations. Some of these subjects we must necessarily pass over, and others, particularly the one last mentioned, we must defer speaking of until another occasion. Our efforts must at present be confined to selecting a few practical points for such illustration as they derive from the important work before us.

The plan of M. Esquirol's work is more calculated to save trouble to the author than to the reader, and produces some repetitions and an appearance of want of arrangement. Much, if not the whole, of the section *de la Folie* has, we think, been previously published; that on Hallucinations is dated in 1817; that on Illusions in 1832; the one entitled *de la Fureur* in 1816; that on Puerperal Insanity in 1819; that on Epilepsy in 1815; a chapter on the critical terminations of Folie is then inserted, dated in 1818; and the section on Melancholia is dated in 1820. Demonomania and Suicide are dated 1814 and 1821. These subjects being discussed in this inconvenient order in the first volume, the second begins with treatises on Monomania, Mania, and Dementia; the first recently composed or at least revised, the second dated in 1818, and the third in 1814. Among other inconveniences hence resulting, the reader is disposed to conclude that M. Esquirol considers *folie*, hallucinations, illusions, fury, melancholia, mania, and monomania as so many separate disorders. This is

particularly the case as regards *la Folie,* by which we understand insa-
nity, and *la Manie,* by which we should understand the same, if the
observations made under this head did not show that by the latter term
M. Esquirol means a distinct affection.   We conclude that la Folie is
intended to express general insanity, and la Manie only its maniacal
form; but the definitions given of these terms afford little help, being
nearly word for word the same: the only important difference being that
la Manie is described as a state marked by excitement.

" La folie, l'aliénation mentale, est une affection cérébrale, ordinairement chronique,
sans fièvre, caractérisée par des désordres de la sensibilité, de l'intelligence, de la
volonté.
"Je dis ordinairement, parce que la folie est quelquefois d'une courte durée,
parce qu'au début et dans le cours de cette maladie, il se manifeste des symptômes
fébriles." (Vol. i. p. 5.)
" La manie est une affection cérébrale, chronique, ordinairement sans fièvre, carac-
térisée par la perturbation et l'exaltation de la sensibilité, de l'intelligence, et de la
volonté.   Je dis ordinairement sans fièvre, parce qu'au début, quelquefois dans le
cours de la manie, on observe des symptômes fébriles qui peuvent en imposer, et qui
rendent difficile le diagnostic. (Vol. ii. p. 132.)

Whatever may be objected to their arrangement, the treatises are all
full of facts of the most interesting description, gathered in the course of
long experience and with unusual opportunities, detailed with clear-
ness and force, and accompanied by reflections indicative of the acute
and judicious character of the author's mind.

Dr. Prichard's treatise was among the first of those of which the origin
has been attributed, by the writers, to the Cyclopædia of Practical
Medicine; and if no more direct benefit should have been communicated
to the profession by that comprehensive publication, (which we are, of
course, very far from asserting,) the indirect advantages arising, and to
arise, from the volumes which it has suggested, are and will be such as
the editors must always contemplate with profound satisfaction.   Dr.
Prichard's rank among the most distinguished living medical authors is
too well known to require any laboured introduction of him to the notice
of our readers.   The general character of his treatise may be said to be,
that it contains the best information which is at present possessed on the
various matters of which it treats.   It is a fair, clear, and admirably
condensed compendium of documents and statements from various au-
thorities, collected in various establishments for the insane, in various
countries; so placed together, and with so much discrimination com-
mented upon, as to convince the reader that the first object of the author
has been to elicit truths on which the practitioner, the moralist, the
jurist, and the legislator might rely.
In his introductory chapter, after noticing the unsuccessful attempts
at definition made by several previous writers, Dr. Prichard quotes with
approbation the observation of Pinel, that insanity consists, in certain
cases, in a morbid perversion of the affections and moral feelings exclu-
sively, and without any perceptible lesion of the intellectual faculties;
an observation which he considers of the highest importance, pathologi-
cally and practically, and which he takes much pains to confirm.
Dr. Prichard's division of insanity, therefore, is, first, into *moral* insa-
nity, and secondly, *intellectual* insanity; the latter being subdivided

into *monomania*, or partial insanity; *mania*, or raving madness; and *incoherence*, or dementia.

This division is simple, and seems to admit of useful practical application: it also possesses, as expressed by Dr. Prichard, the great recommendation of conveying intelligible ideas, in English words. We concur in the opinion expressed by the author, and by Pinel, that there are cases of insanity in which the disorder is chiefly shown in a disturbance or a depravement of the feelings and affections; cases, indeed, which, in their slighter forms, present little but eccentricities of or of temper, exercised, in different examples, in benevolent or in spiteful modes of action; but in many cases, without any general suspicion of insanity of mind; producing effects which destroy the happiness of families; the consequences of what are commonly spoken of as extreme or habitual bad temper, or capriciousness as regards the attachments of friendship or relationship. This kind of moral insanity begins in the slightest departures from healthy feeling, and may be traced through every variety of shade to forms of severity in which it is so evidently associated with an infirm, ill-judging, ill-reasoning, perverted mind, as to leave some doubts, in our estimation, whether the slightest forms of moral insanity are not in reality connected with some proportional defect in the mental powers. We must confess, indeed, that, great as is our deference to Dr. Prichard's superior observation, we have some difficulty in admitting the existence of any form of moral insanity disjoined from some degree of mental infirmity, less perceptible in the slighter cases, but manifest in the severer; in some instances merely marking out an individual, in others characterizing all the ramifications of a family, and in the latter case illustrating almost every possible variety of moral disorder and mental peculiarity. One is immoral, one is extravagant, one is morose, one is ever pursuing fancied discoveries; and none is of sound mind. The connexion of these cases with a certain mental character seems to us to be shown in this, that whatever palpably affects the mind,—as drinking wine or spirits, for instance,—brings out the more the peculiarity of the affection, making one more openly immoral, another more thoughtlessly extravagant, another more dangerously morose, another more wildly speculative: showing that the disordered affection shoots out the more in proportion as the controlling mental power is removed; and rendering it probable that its first springing up in the character was attributable, at least in part, to some want of mental balance:—we say in part, because we presume that a disposition to be more or less affected by particular impressions, moral as well as physical, may, or rather must, arise from the original constitution of the nervous system of the individual; of that part of the frame, whatever it be, on which such impressions are made, or in which the moral feelings may be said to reside. Even in the case adduced by Dr. Prichard, in which the insanity consists merely of violent gusts of anger, we should lean to the old belief, embodied in an ancient proverb, and attribute these sudden storms of feeling partly to the want of mental power to control them, and partly, of course, to an inherent morbid excitability. We cannot conquer, what may be a prejudice in us,—a belief that in all such cases the intellectual faculties are somewhat unsound. It is also worthy of remark, that *whenever* the mental faculties are disordered,—that is to say, in every case of insanity, the moral

feelings and affections are to some extent impaired: their perversion, indeed, is often the first symptom of mental derangement, and ushers in every successive attack.   In all the intervals in which a man is in sound mind, he may live happily with his wife, and be indulgent to his children: when the attack of insanity is coming on, he treats his wife with cruelty, and threatens the life of those children.   M. Esquirol truly remarks, that a return to the usual feelings is the surest sign of a restored mind.   The question is, whether or not the return of the feelings is the *effect* of the restored mind; whether the original fault is a proneness to excess in the feelings and affections, good or bad, or a defect in the mental power. There is, at all events, an evident disproportion in such cases between the feelings and the controlling faculties, and the practical importance of this class of cases is not less than that which Dr. Prichard attaches to them; and, if authority alone can decide the question, we must acknow-ledge the weight attached to that of Dr. Prichard and of Pinel.   Dr. Prichard seems to think that M. Esquirol has also, after some hesitation, adopted the opinion of the latter, that there is a *manie sans délire*, a *folie raisonnante*, an insanity which exists not only without intellectual delusion, (that old and mischievous notion, not yet quite exploded,) but without intellectual error.

M. Esquirol's opinions are so scattered through the several memoirs of different dates, which form the principal part of his two recently published volumes, that we scarcely know where to look for his latest views on any single point: but, in the commencement of his second volume, when treating of monomania, in pages written since the publication of Dr. Prichard's work, to which he refers, he combats the notion of the intelli-gence being in a state of integrity in what Dr. Prichard calls moral in-sanity, although he maintains that there is a reasoning mania and a monomania.   Our belief is, that the understanding is disturbed in all the cases, only more in some and less in others; on many subjects in one, in others on one subject; and, for the most part, for the very reasons which Esquirol adduces against the belief in a mere moral insanity.   " If it were not so, the lunatics would let themselves be guided by reasoning, and would see that their principles are false and their actions unusual and eccentric.   Their intelligence is more or less in fault; it has lost its influence over their will, it is no longer in harmony with the other facul-ties." (*Esquirol*, vol. ii. p. 5.)

The cases which seem to us, of all that are alluded to by Dr. Prichard, as most countenancing this view, are those in which the only departure from rational modes of action is shown in a fondness for every kind of unmeaning mischief; or for an equally unmeaning love of destroying everything within reach; or for appropriating articles which belong to others, without any probable motive save that of a disordered state of the moral feeling, as when theft is practised by persons of property, or when a patient will take no food unless what he considers to be stolen. Cases of inordinate penuriousness may perhaps be classed with these. Certain perversions of natural feeling, which subject the depraved indi-vidual to the treatment of a criminal, should, we think, always be consi-dered to belong to insanity.   Dr. Prichard alludes to them as constituting cases of moral insanity: they may perhaps belong to disordered sensa-tion.   They are generally associated with some eccentricity of character,

but, as has been shown by too many instances, may arise in minds capable of a high degree of intellectual acquirement; and yet which, in certain circumstances, resign the actions of the individual to the guidance of his disordered propensities alone. The *delirium senile*, or insanity of old people, is surely very generally accompanied by a weakened intellect.

It is important to remember that, in these cases of moral insanity, the prognosis is generally unfavorable, unless arising from any external and accidental cause, which admits of removal, or from the influence of which the patient can be abstracted or defended. In other cases " the disease is likely either to be permanent or to terminate in another form of insanity."

Several cases are related by Dr. Prichard to illustrate the description of moral insanity and monomania, the relation between them, and the transition from one to the other. A careful perusal of these cases has failed to set aside our doubts respecting the alleged existence of moral insanity separate from some disorder of the intellect. In most of the cases there were, as it appears to us, many indications of an ill-judging and weakened mind, and in most of them intellectual disorder of a more marked character supervened. The highly respectable testimony of Dr. Wake of York, of Dr. Bompas, Dr. Fox, and Dr. Symonds, of Bristol, and of Mr. Hitch, of the Gloucester Lunatic Asylum, is adduced in support of the view taken by Dr. Prichard. Mr. Hitch says that such cases have long been recognized in the asylum, and the individuals so affected have been termed there "insane in conduct, and not in ideas." The question seems to turn upon the degree in which the habitual conduct of all individuals depends upon mental determinations. We ourselves incline to the belief that our feelings and affections are the joint result of certain emotions which have been made the subject of intellectual actions, or of reflection; and, when these feelings or affections become perverted or depraved, we can hardly in any case suppose that the mental actions continue to be correctly performed. Such, it appears to us, was evidently the case in the first of Mr. Hitch's interesting illustrations: it is said of the patient, that "on business he would converse most rationally; but, if the opportunity had presented itself, would have expended his money in the most useless purchases. He was capable of making the nicest calculations connected with his own affairs, and was correct in all his data when speaking to a second person; but, when left to himself, his conduct and language were ridiculous in the extreme." Such also appears to us to have been the case in the little girl whose condition is so admirably described in the same communication: a child of seven years of age, who, from being mild, affectionate, and clever, became "rude, abrupt, vulgar, and perfectly unmanageable," despised her parents, was cruel to her younger sisters, would eat her own fæces, drink her own urine, and " swear like a fishwoman." This child, too, was of a family in some of the branches of which insanity had existed; and her bodily health was much disordered. " I could never detect in her," says Mr. Finch, "any fixed idea, either of fear or belief, which influenced her conduct. She acted from the impulse of her feelings, and these were unnatural and unhealthy:" uncontrolled, we should add, by the faculties of her mind, by the recollections of what she had been

taught was decent and proper, and by her judgment. She knew and avowed that her actions were foolish and disgusting, but could not refrain from them. Surely, then, the controlling power was weakened; and the only question is, whether or not that controlling power resides in the intellect?

The sections in which Dr. Prichard describes mania, or raving madness; the phenomena of protracted insanity, including that excited form to which paralysis so generally succeeds,—the subject of an excellent treatise published by M. Calmeil in 1826, (De la Paralysie considérée chez les Aliénés;) and incoherence, or dementia, are examples of condensed and graphic delineation, in which everything is well arranged. There is no unnecessary dwelling on insignificant points, no useless repetition, and the impression left on the mind is clearer than what is commonly derived from writings on such subjects; the diversities of which seem to defy the powers of arrangement possessed by common authors. In the section on Incoherence, the distinction, often neglected by medical writers, of the incoherence consequent on age or disease, from idiotism, or natural imbecility of mind, is well pointed out. In one case the faculties are lost; in the other they never existed: in one case broken recollections of the past remain; in the other there are no recollections, and the mind is as that of an infant. The causes of incoherence, or dementia, when not congenital, are illustrated by a table exhibiting in the first column the number of such cases admitted into the Salpêtrière, in 1811 and 1812; and the second those admitted into M. Esquirol's private establishment.

TABLE OF CAUSES.

	Number of Individuals.	
Physical Causes.		
Disorders connected with the catamenia	11	4
Critical period	29	6
Consequences of childbirth	5	3
Blows upon the head	3	0
Progress of age	46	3
Ataxic fever	1	2
Suppression of hemorrhoids	0	2
Mania	14	4
Melancholia	13	2
Paralysis	3	2
Apoplexy	3	2
Syphilis and abuse of mercury	6	8
Faults of regimen	0	6
Intemperance	9	6
Masturbation	4	7
Moral Causes.		
Disappointed love	1	4
Fright	4	3
Political excitement	0	8
Disappointed ambition	0	3
Poverty	5	0
Domestic griefs	8	4

Dr. Prichard divides incoherence into four degrees: the first is that of *forgetfulness,* or loss of memory, so commonly exemplified in old persons with regard to recent events; and sometimes occurring in individuals at an earlier age, from various sudden impressions to which they have been subjected. The second he terms the stage of *irrationality,* or loss of

reason; a state which is generally long continued, the physical health remaining good, but from which there are some rare cases of recovery, attended with circumstances deserving the attention of the practitioner.

" Pinel informs us that many, especially young persons, who had remained in the Bicêtre several years or months in a state of absolute fatuity, have been attacked by a paroxysm of acute mania, of twenty, or five and twenty, or thirty days' continuance. ' Such paroxysms,' he adds, ' apparently from a reaction of the system, are in many cases succeeded by perfect rationality.' The same result has been observed on the restoration of demented persons, or of maniacs in the advanced stage of insanity, after severe attacks of fever attended with delirium. Such attacks are often fatal to luna- tics; but, of those who recover them, not a few are subsequently restored to the pos- session of their faculties." (p. 96.)

The third degree of incoherence is that in which the individual is inca- pable of comprehending anything that is said to him. Dr. Prichard says it may be styled the stage of *incomprehension:*

" Physical activity is often remarkably displayed by persons reduced to this state, and it assumes the appearance of trick or habit. Some jump or run to and fro, or walk round perpetually in a circle. Some dance or sing, or vociferate frequently. Many talk incessantly in the most unmeaning jargon, attaching no ideas whatever to their words; others pass their time unceasingly in muttering half sentences and broken expressions, in which it is scarcely possible to discover any link of connexion; or, if any association can be traced in their thoughts, it is of the most trivial kind, and de- pending on a word or on some sensible object which for a moment attracts a degree of attention. Many, on the other hand, sit in silence, with a sedate and tranquil look, sometimes with a vacant smile or with an unmeaning stare, and scarcely pronounce a syllable for weeks, or months, or even for years. A few remain crouched in a parti- cular posture, which they always prefer, though to bystanders it seems the most un- easy, and even painful: if placed in a different manner by those who have the care of them, they soon resume their habitual position. Many demented persons crowd round a stranger who happens to visit a lunatic asylum, and gaze at him, having just enough of intelligence to perceive something new and to which they are not accus- tomed in his aspect. Some individuals in this state have a propensity to adorn themselves in a strange manner: they take anything that happens to be in their way, and append it to their dress, which is singular and ridiculous.

" M. Esquirol has described in a striking and accurate manner the aspect of coun- tenance peculiar to dementia, and especially belonging to this stage of the disease. ' To the disordered state of the intellectual faculties,' he says, ' the following symp- toms are added: the face is generally pale, the eyes moistened with tears, the pupils dilated, the look wandering, the countenance motionless and devoid of expression; frequently the muscles of one side are relaxed, and give the face a distorted appear- ance; the body is sometimes lean and emaciated, at others it is loaded with fat: in such instances the face is full, ruddy, the neck short. In a few persons no outward sign can be perceived indicative of the decay of intelligence." (p. 97.)

The fourth degree of incoherence is that of *inappetency*, or loss of instinct and volition; a state in which even the animal instincts are lost, and the individual has merely organic or physical existence; appearing scarcely conscious of life, having neither desires or aversions, and being unable to obey the calls of nature. Whoever has had opportunities of observing lunatics must recognize the fidelity of the following sketch of a group of persons reduced to this miserable condition.

" Scarcely any exhibition of human suffering can be more deeply affecting than the aspect of a group of lunatics reduced to the last stages of fatuity, and those who have never witnessed such a spectacle can hardly imagine so abject a state of mental degra- dation. In a group of this description, an individual may be seen always standing

erect and immoveable, with his head and neck bent almost at right angles to his trunk, his eyes fixed upon the ground, never turning them round, or appearing by any movement or gesture to be conscious of external impressions or even of his own existence. Another sits on a rocking chair, which she agitates to and fro, and throws her limbs into the most uncouth positions, at the same time chanting or yelling a dissonant song, only expressing inanity of ideas and feelings.   Many sit constantly still, with their chins resting on their breasts, their eyes and mouth half open, unconscious of hunger or thirst, and almost destitute of the feelings which belong to merely physical life; they would never lie down or rise were they not placed in bed and again raised by their attendants.   A great proportion of the patients who are reduced to this degree of fatuity are found to have lost the use of their limbs in a greater or less degree by partial or general paralysis.

"From such a state it is scarcely imaginable that recovery ever took place, but patients in the last stage of fatuity often linger for many years.   Their state, however, is not always uniform: some of them have comparatively lucid intervals, in which nature seems to make an effort to light up the mind and recall lost impressions and ideas.   I have often observed a patient who sits all day in a wooden elbowed chair, with his chin hanging over his breast, appearing hardly conscious of existence, and unable to assist himself in the calls of nature, who would not eat if food were not actually put into his mouth.   He has been for several years in the same state, except that he occasionally appears to rouse himself, and for a short time to recover an unusual degree of animation.   At such periods he will sometimes read a chapter in the Bible with a clear voice and a distinct and intelligible articulation.   Such occasional variations in the state of demented persons are not infrequent.   They are capable of being raised by favorable influences from a lower degree of their disease into one which is above it in the scale." (p. 98.)

M. Esquirol is at some pains to combat the opinion advanced by M. Foville, and maintained by others, that there is no such thing as a case of real monomania.   Cases to which such a denomination could be correctly applied are, we think, very rare; for, although the unsound state of the mind may, and is in many instances, chiefly manifested in relation to some particular illusion or belief, careful investigation would seldom fail to discover coexisting proofs of an impaired understanding. Dr. Prichard is of opinion that the monomania commonly supervenes upon some degree of moral insanity; and gives cases in illustration of this opinion.   We cannot see any good reason for distinguishing the case of a person who thinks she can regulate, like the philosopher in Rasselas, the course of the sun (Esquirol, vol. ii. p. 8), nor those of individuals who think themselves emperors or princes, from cases of general mania.   A patient who considers himself in audible communication with God and with angels can scarcely be considered as only mad on one subject: his sense of hearing is subject to illusions, and his mind to hallucinations, (to adopt M. Esquirol's terms as expressive of sensorial deceptions and mental reveries, although the difference here again is more refined than real:) if he writes, he hears voices dictating to him; he neglects all the ordinary customs of religion; and when he speaks, he believes himself the mere echo of a voice proceeding from an angel.   Such an individual may be capable of writing prose and verse correctly, but there must be so much disorder in his perceptive and reasoning faculties as scarcely to make it possible that he should be found rational in all parts of his conduct unconnected with these striking delusions.   In other cases related under this head by M. Esquirol, we can only see examples of general mania and melancholia; upon which some particular delusion supervened. A merchant, long remarkable for his wayward and suspicious temper,

rash and unfortunate in his speculations, disordered in his health, and hypochondriacal, always apprehensive of poison lurking in his food, quarrelsome with an indulgent father, jealous of an affectionate wife, reads an account of a pretended dauphin, and immediately imagines himself to be the real dauphin, and forces his way into the Tuileries, to claim his rights. Although he persists in this assertion, makes proclamations to the people, and writes a plausible history of his pretended birth, we can only regard all this as a new feature supervening in a case of insanity; an instance of delusions displacing other delusions, and not to be called a monomania, without a confusion of terms.

Persons of conscientious and timid character often experience an excessive apprehension of being considered capable of acts of unfairness or dishonesty, and particularly in shops or warehouses in which they are placed in the midst of much moveable wealth. The strongest instance of these feelings being carried to excess, and at the same time one of the least questionable cases of monomania, is related in this section of M. Esquirol's work. An unmarried lady, thirty-four years of age, of lively and mild disposition, sanguine temperament, with blue eyes, auburn hair, and florid complexion, had been brought up, as is often the case on the continent, in commerce, and had always been scrupulously afraid of taking any advantage of others, in matters of business, and in making out accounts. It was her frequent custom to pay a visit to an aunt, without her bonnet, and dressed in an apron which she usually wore. When about eighteen years of age, she evinced an extraordinary uneasiness, when coming away from her aunt's house one day, respecting the possibility of bringing away anything belonging to her aunt in the pocket of her apron; and after that time, she always paid her aunt visits without her apron. She became more and more afraid of making out unfair accounts; and when touching money, of retaining any part of it between her fingers. She acknowledged that this scrupulous fear was ridiculous, but said that she could not help feeling it. At length she was obliged to give up her commercial occupations. Her disquietude and her fears became more general. After touching anything, she washed her hands in a great quantity of water. Her constant care was to touch nothing with her hands or her clothes; and she contracted the custom of rubbing the fingers of each hand against the other, as if to free them from something under the nails. She carefully refrained from opening doors, windows, and closets, because something of value might be attached to the handles or the keys, and adhere to her hands. She carefully examined every chair or seat, before sitting down; wore the tightest shoes that she could force her feet into, in order that they might contain nothing concealed. After many amendments and relapses, this lady has now been for some time under the care of M. Esquirol. During eighteen months she appeared tolerably free from the peculiarities above mentioned, and the action of rubbing the fingers was seldom observed; but since June, 1837, says M. Esquirol, writing this account of her six months later, the phenomena have appeared with greater intensity, and this daily increases. In order to give a more lively idea of her state, he describes her habits during one day. She always rises at six; and an hour and a half, and sometimes three hours are passed at the toilette. Before getting out of bed, she rubs her feet for ten minutes, to remove anything that may have

got between the toes or under the nails; she then carefully examines her slippers, and desires her maid to do the same, to ascertain that they contain no valuables. Her comb is passed many times through her hair, for the same purpose. Every article of dress, and every fold, is cautiously inspected, with numerous rubbings of hands at intervals during such inspection; and all this done with fatigue and extreme anxiety; and if omitted, the omission leaves her ill at ease all the day. At ten she is ready for breakfast, when the napkins, plates, glasses, jugs, and knives undergo the same kind of scrutiny. At dinner, the same precautions are taken. Her preparations for going to bed are as minute as those of the morning toilette. During the day she reads, or works with her needle; but these and all other occupations in which her hands are brought in contact with any other object, lead to renewed rubbings of the fingers. If she writes, the paper is shaken, and the pens, and the writing-desk, and she never seals a letter without being assured by her attendant that there is nothing folded up in it. If alone in a room, she will not sit down until some one comes and assures her that there is nothing on the chair to prevent her so doing. She pays and receives visits, but always contrives to practise her cautions; and when she goes to see her relatives in her native town, she so arranges her journey as to arrive early in the morning, to enable her to change her dress completely before seeing her friends. With all this, she never talks unreasonably, but is aware of her peculiarities; she even sees the absurdity of her scruples and fears, and laughs at them herself; or sometimes she groans and weeps over them. She tries to overcome them, and even points out the means, often such as are very disagreeable to her, of getting the better of them. She goes to shops with her servant, never touching money herself: she goes to the theatre and the public promenades; makes parties to go into the country, and joins a social circle every evening. Her conversation is lively, clever, and sometimes sarcastic (*malicieuse*); but if she changes her chair, or touches her head, or her dress, or if any one comes into or goes out of the room she rubs her fingers diligently. Her health is good. It is impossible, M. Esquirol says, at any time, to detect the least disorder of the sensations, in the reasoning, or in the affections of this interesting patient.

We have mentioned the particulars of this case, as illustrative of pure monomania: extreme conscientiousness appears to furnish its moral peculiarity; but we should hesitate to pronounce it, with M. Esquirol, unmarked by a morbid state of the senses and of the understanding or reason: and we cannot recognize the justness of the term *manie raisonnante* (reasoning mania) applied to cases of this kind by Pinel, or the term moral insanity, given to them by Dr. Prichard. In this instance the moral peculiarity was the probable origin of the malady; but surely impaired sensorial functions and reason became complicated with the morbid conscientiousness. It is no less unquestionably incorrect, we conceive, to call any kind of mania a reasoning mania: the reason in this case, for instance, is correct on ordinary matters; it even retains power enough to point out the absurdity of the patient's conduct; but it is not powerful enough to prevent that conduct: to that extent, therefore, it is impaired. It is overmastered by an undue activity, apparently, in one portion of the brain. The reason of the lunatic in "reasoning mono-

mania," says M. Esquirol, is not essentially injured, for it comes in aid of the lunatic's actions, and the patient is always ready to justify his deeds and sentiments." These circumstances, it appears to us, warrant exactly opposite conclusions.

M. Esquirol and Dr. Prichard are zealous anti-phrenologists; but we incline to think that the phrenologists could give a better account of some of these cases than they. But upon that debateable ground we have no wish to enter; seeing that it is too much occupied with prejudices, political and religious, pitiless and fierce, to allow the combatants room and fair-play. It touches besides, too dangerously upon too many of those subjects upon which mankind rejoice in conventional delusions; it lays bare too much the sophistry which shrouds many artificial social relations whereupon men fear

> " Lest their own judgments should become too bright,
> " And their free thoughts be crimes, and earth have too much light."

The monomania, if it can properly so be called, of drunken persons, of incendiaries, and of homicides, is forcibly depicted by M. Esquirol: of these varieties, the examples are numerous; and they touch on the delicate boundary where the extent of moral responsibility is difficult to be defined, and the right of human punishments controvertible. The exact limits of these lamentable cases require to be pointed out by bold and enlightened moralists; and the inconveniences resulting from them to be dealt with by humane and courageous legislators. Publicly putting half-lunatic criminals to death has, we apprehend, done little to promote the security of mankind, and still less to improve the humanity of the spectators of such dreadful inflictions. In some future age, the prevention of crimes will perhaps occupy more attention than their punishment.

A section of Dr. Prichard's treatise is devoted to the consideration of General Paralysis complicated with insanity, first pointed out to physicians by M. Esquirol in the Dictionnaire des Sciences Médicales; a form of paralysis more frequent in men than in women, and more frequent among patients of the cultivated classes than among the poor. At Charenton, the proportion of paralytics is one sixth of the whole number of admissions. We had a few years ago an opportunity, with the assistance of M. Calmeil himself, of observing in that admirable asylum, the various forms or degrees of this disorder in lunatics, of which his work contains such a faithful description. In the first degree of the malady, its nature is indicated chiefly by an impediment in the movements of the tongue, a slowness and difficulty in articulating syllables; but the tongue can be steadily protruded, and the muscles of the face are not distorted. In the second degree, all the voluntary muscles, and the sensations, are affected: the patients rise up slowly, and walk with difficulty; and slight impressions upon the skin and nostrils are disregarded. In this stage, the functions of physical life are nearly in a healthy state, but the patient's condition is dirty and miserable. In the last deplorable degree of this complication, " these patients, motionless and insensible, are reduced to a state of mere vegetation; their existence is a kind of slow death." It is remarkable, however, that the death of these patients is seldom, as M. Calmeil observes, the simple consequence of the cerebral disease; but is occasioned by the formation and suppuration of pulmonary tubercles, and by inflammation and ulceration of the intestinal canal. The para-

lysis itself is not, in these cases, the result of effusion of blood in the
brain, of acute ramollissement, or of sanguineous congestion, but almost
uniformly of chronic inflammation of the substance of the brain, espe-
cially at its surface; sometimes complicated with congestion in the brain,
hemorrhage in the cerebral substance, or between the two laminæ of the
arachnoid, ramollissement in some part of the brain, or erosions of the
cerebral surface. The mean duration of such cases is a little more than
twelve months. The complication, which is certainly of common occur-
rence in Paris, appears to be more rare in the south of France, and seldom
to be seen in the great asylum at Aversa in Italy. It has not been much
observed in this country; but Dr. Prichard says that the result of several
enquiries made by him on the subject is an opinion that it is by no means
uncommon in our public institutions, although comparatively rare in pri-
vate asylums. M. Esquirol relates the case of a patient who was brought
to him, with the hope that he might give a promise of his recovery; but
in which he gave a most decidedly unfavorable prognosis at the first
interview; chiefly founded on the observation of a slight degree of diffi-
culty of articulation with which the mental excitement was complicated.
The rapid progress of these cases is, he observes, very striking.

The symptoms and character of Mania are described with great force
and fidelity in M. Esquirol's second volume.

"The face of maniacs is flushed and swelled, or it is pale and contracted; the hair
is set on end (hérissé), the eyes are brilliant and haggard: the patients shun the light
and have a horror of certain colours; they have noises and ringing in their ears; their
ears are sometimes very red: the slightest noise excites them. Monomaniacs have
headach, heat in the interior of the cranium, anorexia, or a voracious appetite. Con-
sumed by internal heat, they are tormented by a devouring thirst for cold drinks; they
have a burning sensation in the bowels, constipation, insomnia, or, if they sleep,
frightful dreams and sudden awakings.
"Maniacs are remarkable for false sensations, illusions and hallucinations, a faulty
association of ideas, which are rapidly reproduced without order or connexion; they
are remarkable for the errors of their judgment, the perturbation of their affections,
and the violence of their will. They have great nervous excitement; their delirium is
general, all the faculties of the understanding are excited and overturned, (*exaltées et
bouleversées*); and every thing that excites an impression, either physical or moral,
upon them, including the vain products of their imagination, excites them and becomes
the subject of delirium." (Vol. ii. p. 133.)

The diverse modes in which the patients express their ideas in maniacal
affections, and their various and expressive gestures are well described by
M. Esquirol, (vol. ii. p. 151); and yet no description can comprehend
all the singular varieties observed among them. Some repeat one word
again and again for many hours; some speak of themselves always in the
third person; and we have known some hold long and objurgatory collo-
quies, in two feigned voices. Some invent a peculiar language; some of
course vociferate and sing. All these peculiar modes of speech are but
so many expressions of shades of mental excitement or oppression; rea-
dily comprehended by persons of strong feeling, albeit not mad. The
remarkable alterations of the countenance, which have attracted less
observation, are graphically described by Esquirol; and some of them are
terrifically represented in the plates.

The erroneous notion that all lunatics can bear cold and hunger with
impunity was long since refuted by M. Esquirol. Some of the patients,

apparently tormented with feverish heat, delight in exposing themselves freely to cold air or cold water; but many of them suffer much in the winter, and would die if not guarded from severe exposure. A disordered state of the digestive organs often renders them averse to taking food; and on this point M. Esquirol makes an observation of some importance; namely, that he has never seen any bad consequences arise from the refusal to take food in *mania*, although, in *monomaniacs* and in the *melancholic*, hunger is resisted with a hurtful and even fatal stubbornness. Want of sleep, and constipation, and sometimes, with worse effects, diarrhœa, are common symptoms in the maniacal.

Long experience has taught M. Esquirol, that amidst all the violence and apparent irregularity of mania, it observes, for the most part, a regular course; and this he has endeavoured to describe. We think practitioners in general are little acquainted with this part of the subject. Maniacal patients are commonly removed to asylums as soon as they become troublesome, and, except to those accustomed to the care of them, nothing is more perplexing than to be called upon to say what the chances of recovery are in any case, or how long the disorder will continue, or what will be its character in its progress. These are points on which it is well worth while to attend to the opinions of M. Esquirol.

" Mania," he says, " has its precursory symptoms: we distinguish three periods. In the first, the patients complain of general and undefinable uneasiness, headach, heat of the cranium, burning feeling in the entrails, pain of the epigastrium, disgust for food, thirst, constipation : they have internal agitations, vague inquietudes, insomnia, reveries, presentiments, alternations of gaiety and sadness, and sometimes a transient delirium; but they yet retain affection for their parents and friends. The symptoms increase; the delirium becomes general and permanent, the moral affections become perverted. The passage to this second period is marked by some acts of violence or of fury, spontaneous or provoked: after a time, most frequently after a considerable time, the maniac becomes calm, less turbulent, less disposed to fury; he is more attentive to outward impressions, and more docile when advised. At length the moral affections reawake, the traits of the countenance become less agitated (*convulsifs*), the emaciation diminishes, the patient sleeps longer, and is conscious of his state. Ordinarily, in proportion to the reestablishment of the functions of nutritive and relative life, a more or less complete crisis takes place; but if the functions of nutritive life reestablish themselves, and the delirium does not proportionably diminish, we have reason to fear that the mania will pass into the chronic state, and degenerate into dementia." (Vol. ii. p. 158.)

The progress of mania is, however, not always quite so regular.

" We have seen," continues Esquirol, " that this disease varies in its mode of invasion. It varies in the succession of the symptoms, in their duration, in their termination. Sometimes the mania attains its highest period from the very beginning, and continues to the end of the attack, which takes place all at once. The patient seems then like a person who has come out of a dream; it appears to him as if some obstacle which isolated him from the external world has been torn, or has fallen from before his eyes. Sometimes, a progressive diminution of the number and intensity of the symptoms foretels the approaching solution of the malady; sometimes the patient only arrives at convalescence by a succession of remissions, of greater or less completeness and duration. One point to which I cannot too strongly call attention, is the remission which is observed in the course of the first month from the invasion of the mania: this remission is constant. Does it mark the cessation of the period of irritation?" (Vol. ii. p. 167.)

Mania shows itself most in persons of robust and plethoric constitution,

of the sanguine or nervous temperament. The individuals affected are often possessed of great susceptibility, a lively and irritable character, disposed to anger, with an ardent imagination; embracing extravagant projects with enthusiasm, and giving themselves up to hazardous speculations. Some of the patients are found to have been subject to hemorrhages, cephalalgia, dreams, somnambulism, nervous affections, hysteria, convulsions, epilepsy, and cutaneous diseases.

The mania of epileptics has a peculiar character: it comes on after the paroxysms, and lasts either a few hours or a few days. Of four hundred epileptic patients at the Salpêtrière, fifty are maniacal after the paroxysm. Their fury is more dangerous and more to be feared than that of any other lunatics.

Mania is sometimes preceded by melancholia or hypochondriasis. Sadness, distrust, general uneasiness, pains of the limbs or head, and an apprehension of some serious illness, or even of madness, are sometimes the precursors of mania.

Mania does not often suddenly break out; but yet it is the most frequent form of a sudden attack. In general, some irregularity in the affections is first perceived; and these, we doubt not, are preceded by some disordered mental movements, which only become manifest in these results. By slow degrees, and through every kind of irregular conduct, the disorder arrives at its height. Sometimes a violent attack of mania is preceded by a state of stupor and helplessness. The patients are motionless, remain where they are placed, require to be dressed and fed; their eyes are brilliant and the face contracted. Then the mania suddenly and violently declares itself. In other cases, after the disappearance of some habitual indisposition, the individual feels a perfect sense of well-being, thinks himself to have attained the most perfect state of health; feels possessed of an extraordinary degree of strength and of happiness: all nature appears more beautiful in his eyes; and everything seems possible. Insomnia, constipation, agitation, progressively ensue; the ideas become confused, and "the patient enters gaily into the most frightful of maladies." (*Esquirol*, vol. ii. p. 146.)

As respects the actual state of the mental faculties in mania, M. Esquirol considers that it chiefly consists in a defective power of attention; or, as he expresses it, in a defect of harmony between attention and the actual sensations, ideas, and recollections. (Vol. ii. p. 148.) This, we would beg to observe, is a defect subversive of accurate comparison; but a defective state of other faculties, as of the memory, or the imagination, may produce the same result.

There is nothing particularly satisfactory to us in the short section introduced by Dr. Prichard on the state of the sensorial and intellectual functions in such cases. Dr. Prichard reverts to Pinel's opinion of the primary disorder, in many instances, of the moral constitution, and quotes the passages in which Broussais has illustrated the devouring character of theory by ascribing this moral perversion to an irritation of the trisplanchnic apparatus, and especially in that of the stomach, acting on the brain. Guislain's endeavours to determine the particular intellectual process which undergoes the modification characteristic of madness are mentioned with approbation, although it is pronounced to have failed,

" perhaps owing to the inscrutable nature of the research." Hoffbauer is cited as maintaining that many disorders of the intellect originate from certain defects in the power of attention; which is too concentrated in monomania, and altogether distracted in mania. This observation is undoubtedly true of many cases; but we presume that the cause of the impaired attention is sometimes an over-excited imagination, sometimes a prepossession of the mind by some morbid train of ideas by which the attention is enchained, sometimes a delusion of the sense, and sometimes an impairment of the memory; the constant effect still being this defective attention noticed by Hoffbauer, and by others; a state incompatible with just comparison, and consequently with the exercise of judgment.

The connexion of any particular state of the physical functions with insanity has not been more satisfactorily established than the precise condition of the sensorial and intellectual functions. A disordered state of the alimentary canal is the most common; but the nature of the relation of this to the mental disorder is not established. Acute cases are commonly attended with febrile symptoms, and excitement of the heart and arteries, and with sleeplessness. Other cases supervene gradually, with a torpid state of the natural and vital functions. Customary discharges, and external and internal affections, sometimes disappear when insanity comes on, and reappear or resume their progress when the mental disorder subsides:

"The catamenia, if not suppressed previously to the manifestation of maniacal symptoms, soon become scanty, or cease entirely after its actual appearance. Lochiæ and other analogous effluxes are suppressed ; ulcers, which had become habitual and had long discharged, are dried up ; chronic eruptions generally disappear, or are materially lessened; symptoms of pulmonary phthisis in various stages cease or become mitigated in a remarkable degree. On the decline of mental disorders, it is often found that the return of such discharges, or the revival of suspended trains of morbid phenomena, is the harbinger of restoration to a sound state of mind, though not to complete bodily health." (*Prichard*, p. 125.)

All who have been in the habit of visiting lunatic asylums must have become familiar with the faces of many of the inmates, who have been in confinement ten, twenty, or perhaps thirty years; and if we suppose that proper means have been adopted to promote their recovery, the view of the curability of such disorders must become extremely limited. Many of the cases, no doubt, have been from their very nature incurable, dependent on a peculiar constitution of the brain or on irremediable lesions. In some, it is not uncharitable to suppose that medical means have been too soon abandoned.

If recoveries take place, they generally take place early. Death not unfrequently follows not long after the invasion of madness. If neither of these events takes place, the patient sinks into a state affording very little hope, and generally set down as hopeless. The complication of insanity with other diseases materially affects the prognosis; and nothing makes it more unfavorable than the smallest indication of the general paralysis already spoken of. When the mental disorder has been preceded by attacks of epilepsy, the chance of recovery is not great. Mania is a more curable form than monomania or dementia. The number of cured at Charenton, out of 487 cases, was upwards of two fifths. All the reports and tables of lunatic asylums seem to establish the

fact that recovery is much more probable in the early than in the advanced periods of the malady. The importance of proper treatment at such an early period, and the impropriety of sending the patient hurriedly off to a house of confinement, with no assurance of a proper system of treatment being persevered in, is very evident; but has been far too much overlooked. Nor are there wanting cases to prove that even after many years passed in a state of insanity the mind may recover; and that such recoveries have sometimes been overlooked or even concealed we have too much reason to suspect. Cases are related by M. Baumes and by M. Esquirol in which recovery suddenly took place after more than twenty years' duration of madness. Mr. Hitch, of Gloucester, to whom Dr. Prichard expresses himself indebted for so many particulars, has furnished him with tables showing the time that each case, of many cases, required for its treatment to effect recovery, and the length of time that the disorder had existed in each case prior to admission. The results are highly interesting. They show not only that the greater number of recoveries take place in the recent cases, but that in some, recovery took place in a short time after admission into the asylum, although the disease had been of long anterior duration. Of three male patients who had been insane ten years, one was cured in ten months, and the other two in six months; and one who had been insane forty years was cured in four months. Of two female patients who had been insane ten years, one was cured in nine months and the other in a year; and three other cases are recorded of cure after eleven, seventeen, and twenty years.

Generally speaking, the younger the patient is, the greater is the chance of recovery: and from the forty-fifth year to the end of life the number of recoveries progressively diminishes. Yet in the tables of Charenton, cited by Dr. Prichard, twenty men are marked as having recovered after the fiftieth year.

Mr. Farr introduces into his very able and searching pamphlet two Tables of Recoveries, one showing the total admissions and reported cures in twenty-six lunatic asylums, both English and French, the other showing the same circumstances in Irish District asylums, and at Haslar and Bethlem Hospitals. The proportion of cures in the highest of these (the Retreat at York,) is 50 per cent.; and in the lowest, (Hanwell,) 18. Exclusive of the Retreat, the highest proportion of recoveries is 46.2 per cent.; and the lowest, exclusive of Hanwell, is 33. Sir William Ellis ascribes the small number of recoveries at Hanwell to the chronic nature of the majority of the cases. We must refer the reader who is interested in the statistics of insanity to Mr. Farr's work, which is full of important facts.

Dr. Prichard has taken great pains to ascertain the proportional number of recoveries in general, and has inserted several tables illustrative of this point, although varying considerably from each other. Dr. Burrows has reported from his own experience a proportion of eighty-one cases of recovery in one hundred, and in recent cases of ninety-one in one hundred. Dr. Jacobi, of Siegburg in Westphalia, reports forty cures in one hundred cases, and six as alleviated. In the French asylums the proportion of recoveries is about one third of all the cases, and the same proportion seems to take place in the English asylums: but M. Esquirol says that the cures are more numerous in France than in England, (vol. i.

p. 93,) and he reproves his countrymen for supposing everything is best out of their own country; a fault of which they are not, we think, generally supposed to be guilty. Of late years, however, the proportion of recoveries at Bethlem Hospital has been considerably more than one half; but it is to be remembered that no cases are admitted in which the disease has already lasted longer than twelve months, and that the paralytic, the idiotic, the aged, and the infirm are excluded, as well as those discharged uncured from other hospitals. With such restrictions, the generality of the cases must be favorable to recovery; and Dr. Prichard very justly observes that the proportion of cures would probably be still greater, but for the regulation by which those uncured at the end of a year are discharged. The number of patients cured at the Salpêtrière in the *second* year is nearly as five in six to those who recover in the first year. "We are not," says Dr. Prichard, with his usual absence of exaggeration, "authorized to draw any positive conclusion on this subject, but we can hardly fail to entertain a strong doubt as to the propriety of the regulation still subsisting at Bethlem, and a suspicion that it is a relic of the ignorance of our predecessors which calls loudly for such a revision and adaptation to the improved state of knowledge, as would ere now have been obtained under our continental neighbours."

But the most encouraging table is that furnished by Mr. Tuke, of the Retreat near York; a table exhibiting the numbers of admissions into that asylum from 1812 to 1833 inclusive, with the results of all the cases. Of this table Dr. Prichard gives the following summary; first observing that the admissions of each year are divided into three classes, one for cases of less than three months in duration, a second for cases of more than three but less than twelve months, and a third for cases of more than twelve months: the fourth class contains cases of relapse re-admitted.

Cases classed as above.	Recovered.	Died.	Removed.	Removed Improved.	Remain.
First class 63	51	8	1	2	1
Second class 65	28	10	6	3	18
Third class 101	31	15	17	4	34
Fourth class 105	58	17	13	1	16
Total.............334	168	50	37	10	69

By this table it is seen that Mr. Tuke is warranted in estimating the recoveries in recent cases as nearly 7 in 8; but as it appears that some of those enumerated in the first class died soon after admission, of other disorders, and as others in the same class had in reality long been eccentric, and were consequently old cases, Mr. Tuke considers that the probability of recovery from insanity in recent cases is even greater than as nine to one. Our readers will do well to refer to the statements contained in this section of Dr. Prichard's work; for we believe the general opinion entertained with respect to cases of insanity, even of a recent date, is more unfavorable than ascertained facts permit us to retain; and the desponding view taken of such cases has an evident tendency to weaken the efforts of practitioners to get the better of this class of maladies. M. Esquirol (vol. ii. p. 177,) considers the maniacal form of insanity as

offering the greatest chances of cure. The first attack is generally curable, if uncomplicated with epilepsy or paralysis. The second attack is also often cured; but the disease becomes infinitely more doubtful after the fourth. Of 269 maniacal cases cured, 132 were first attacks, 77 second attacks, 32 third attacks, and ten were cases in which the attacks had exceeded three in number. The duration of this form of insanity is also shorter than that of others: the greater number are cured in the first year, as is seen by the following Table of cures.

Cured in the first month,	....	27
....	second........	32
....	third	18
....	fourth ...., ...	30
....	fifth..........	24
....	sixth	20
....	seventh	20
....	eighth	19
....	ninth	12
....	tenth	13
....	twelfth	23
.. in the second year....		18
....	subsequent years	13

Total...... 269

We would also strongly recommend to careful perusal the sections in Dr. Prichard's Treatise relating to the modes of death in lunatics, and to relapses and recurrent insanity. As in most other parts of the work, the author has in these sections condensed much practical matter, of the highest value, into a very small space.

The mortality is thus stated by Esquirol: "The highest mortality, for the two sexes, is between the ages of thirty and forty; that of the women is greatest between forty and fifty; that of the men between thirty and forty; from and after sixty years of age it is higher among women than men. It results that the mortality of lunatics is more precocious among men, and in advanced age infinitely greater among women." (Vol. i. p. 102.) From a comparison of different hospitals, he concludes the mortality in the different forms to be

In Mania,   1 in 25.
In Monomania, 1 in 16.
In Melancholia, 1 in 12.
In Dementia,   1 in 3.

Some idiots live a long time; but they seldom attain to more than thirty or forty years. The mortality of maniacs is greatest in the first two years of the malady; among the female patients (at the Salpêtrière) it is greatest in the first year.

It would scarcely appear credible that among the other extraordinary evidence given by medical men respecting insanity, they have on some occasions solemnly averred that it has no tendency to shorten life. The smallest consideration, one would think, would show that so serious a disorder of the nervous system must in general signally impair every function of life. Mr. Farr's statements and tables on this subject are, as usual, valuable, although perhaps

somewhat intricate to those unaccustomed to statistical details. The following particulars are very intelligible.

"TABLE V.   MORTALITY OF LUNATICS.

Asylums.	Total Patients treated.	Living one year.	Deaths.	Ann. Deaths out of 100 living.	Deaths out of 100 treated.
Bethlem, St. Luke's, Stafford, York, Lincoln, Gloucester, and Hanwell —Lunatics.................	19782	22295	2057	9.02	10.40
General population, age 40-45, Sweden 1811-30.	...	...	...	1.50	...

"The annual mortality among lunatics was 9 per cent.; the annual mortality of the Swedish population at the age of 40-45 was 1.50 per cent. (See *Annals of Medicine,* p. 359.) It need scarcely be added, that at this age the mortality of the Swedes differs inconsiderably from that of other European nations; *madness, therefore, increases the mortality sixfold.* But it is necessary to show that the mean age of lunatics does not *exceed* 40-45 years; as there are not observations sufficient to determine their mortality at different ages. The mean ages of 977 patients admitted in five years at Bethlem Hospital were in 1830, thirty-seven years; in 1831, thirty-five; in 1832, thirty-seven; in 1833, thirty-six; in 1834, thirty-six; so that 40-45 may be safely taken as representing the ages of the entire class—those above, as well as those below that central point." (p. 12.)

Other tables introduced by Mr. Farr, particularly one enriched by the accurate observations of Dr. Charlesworth, of Lincoln, marking the deaths as well as the admissions at decennial periods of life, tend to prove that the mortality increases, as the chances of recovery diminish, with age.

Too little attention has been paid to the *causes* of insanity; not by medical observers, but by the public; and yet the prevention of so terrible an affliction is even of more consequence than the possibility of its cure. An individual who has once been insane seldom wholly regains his social position; he is regarded with at least occasional suspicion; and a union with him is shunned by prudent families. Still, the early indications of a temperament prone to insanity are too little heeded, and proper preventive cautions too much disregarded. A valuable portion of Dr. Prichard's book is devoted to this subject. Many questions, he observes, connected with the theory of mental disorders, are yet and will perhaps always remain involved in obscurity, but an enquiry into the antecedents of insanity, and into the appearances disclosed by dissection, is accessible to us. We mention this as one enquiry, because the necroscopical phenomena are chiefly valuable as throwing light upon the physical origin of the disordered state of the mind, and form a part of that more general enquiry which comprehends the moral causes. The predisposing causes are still, we apprehend, the most important objects of study. Among these, Dr. Prichard considers the influence of constitutional predisposition, hereditary or original; sex; age; temperament; previous attacks of insanity and other diseases of the brain; and, lastly, education: being guided, throughout the enquiry comprehending these interesting particulars, by facts collected from various countries, and carefully considered.

That certain individuals, and certain families, are more prone to insanity than others, is a fact universally admitted on the most extensive

testimony; and that when once it has arisen it is frequently transmitted, seems equally well established.   M. Esquirol is of opinion that the children of parents in whom insanity declared itself at some period before their birth are more likely to become insane than those born before the appearance of the malady; an opinion of which we somewhat question the soundness.   He is also of opinion that the disease is more frequently transmitted by the female parent than by the male. (Vol. i. p. 65.) When insanity has appeared in the family of both parents, it is reasonable to presume that the predisposition to it in the children is stronger. Among the poor, the hereditary cases constitute one sixth; but the proportion is still greater among the rich. (*Esquirol,* loc. cit.)   He has now under his care the children of several patients whom he attended in the first years of his practice.

Out of 1380 patients admitted into the Middlesex Lunatic Asylum, it was ascertained that the parents or relatives of 214 had been insane; and in 125 of the cases no other cause could be assigned for the disease, Sir William Ellis says, than that it was hereditary. (*Treatise,* p. 42.)

Certain physical laws, obeyed by the constitutions of persons of the same family, seem to induce the malady at particular periods of life; in some families very early, and in others about the age of fifty.   The effect of marriages between persons near of kin in producing a tendency to insanity has long been suspected.   Accidental fright experienced by the mother during pregnancy is mentioned as a cause by Esquirol; and we have little doubt that the character and happiness of an unborn individual is often influenced by the general state of the mother's mind during her pregnancy.   When insanity appears in several members of one family, it is commonly in the same form: the propensity to suicide has often been thus observed; and it is well known that a peculiar nervous temperament exists in some families, of which some of the members are mad, and some disposed to paralysis, chorea, epilepsy, or hysteria; some are melancholic, whilst some remain through life merely odd and *nervous.*

Whether women are less subject to insanity than men is a question of which different sides have been taken, on uncertain grounds, since the time of Cœlius Aurelianus, who maintained the affirmative.   Dr. Prichard has compressed into two pages such satisfactory evidence of this not being the case, that we cannot do better than lay those pages before our readers.   The question is by no means an unimportant one, in relation to the causes.   The evidence is principally taken from M. Esquirol's report on the Royal House of Charenton.

"In the hospital of Charenton, during the years to which M. Esquirol's report has reference, the proportion of male patients admitted to that of female was three to two. This proportion is the result of peculiar circumstances, and is very different from that which obtains elsewhere, as well in France as in other countries.   From a variety of public documents it appears that, in the great hospitals of the Salpêtrière and Bicêtre, an inverse proportion to that above stated holds in the numbers of the two sexes; male patients at the Bicêtre being to females in the Salpêtrière only as two to three. This, however, does not hold throughout France.   It appears, from a great number of published and private documents which M. Esquirol has collected, that in the cities in the south of France the number of male is somewhat more considerable than that of female lunatics; while, in the northern departments, the number of females predominates in a greater degree; but that in all France the number of insane women is to that of insane men very nearly in the proportion of 14 to 11.   From Spain the

returns which M. Esquirol has been able to obtain are very defective: the result, which can only be looked upon as a presumptive one, since it rests on few data, and may hereafter be modified by more copious information, gives an excess of one fifth in the number of female lunatics compared with that of males.   In Italy it appears, from the documents obtained, that the proportion is different; there being more insane men than women, particularly in the kingdom of Naples.   In all Italy, 5718 male lunatics were reckoned, and 5067 females.   In Holland and Belgium, according to the information given to the world by M. Guislain, it appears that the number of females in the lunatic asylums is much more considerable than that of males, being as 34 to 29; and this excess on the side of females is rather greater in the southern, or Belgian provinces, than in those of the north, or in the present Dutch kingdom.   In Great Britain and Ireland, the proportion of male to female lunatics is as 13 to 12. In England, the number of men insane, compared to that of women, is more considerable than in Scotland and Ireland.   This excess in the proportional number of male above that of female lunatics in England is greater, according to Dr. Burrows, in the higher than in the lower classes of society.   M. Esquirol, who has cited this observation, adds a parallel remark in respect to the comparison of different orders of society in France; insanity being apparently more prevalent among men, compared with women, in the higher than in the lower classes.

"In the same memoir, M. Esquirol computed that, in the north of Europe, the proportion of male to female lunatics is greater than as above stated: he says that it is as three to two.   In this are included the results obtained from reports of lunatic asylums in various parts of Germany, in Denmark, Norway, and Russia.   Subsequently to the publication of this report by M. Esquirol, Dr. Max. Jacobi has given us extensive information on the state of lunatic asylums in the Prussian provinces on the Rhine.   In the different establishments of that country, the total number of male lunatics, in the year 1824, was 1180, and that of females 835.   The result nearly coincides with that deduced by M. Esquirol from other documents for the general proportion of Germany.

"In a later memoir, which appeared in 1830, M. Esquirol has given some new results from the statistical reports on lunatics in Norway, published by Dr. Holst. He reduces the proportion of male to female lunatics in that country to an excess of one sixth instead of one third part.

"In the United States of America, it appears from information given by Dr. Rush, by Portman of Massachusetts, and a report of the asylum in Connecticut printed in 1827, that the number of insane men is greater than that of female lunatics.   Later researches have rendered this observation more precise.   In the State of New York, Pennsylvania, and Connecticut, the proportion of males to females is very nearly as two to one.

"On summing up the results of his enquiries, M. Esquirol has shown that, in a sum total of 76,526 lunatics, confined, though not all at the same period, in asylums or hospitals in various parts of the civilized world, there were 37,825 males and 38,701 females.   Thus the proportion of males to that of females is, a fraction being neglected, 37 to 38.   This difference is so much the less considerable, as, in the general population, the number of males somewhat exceeds that of females; yet, small as it is, it is sufficient, as M. Esquirol observes, to refute the assertion of Cœlius Aurelianus, who supposed that women are less subject to insanity than men." (p. 162.)

We find Esquirol, however, stating (vol. ii. p. 138,) that *mania* is more frequent among men than among women.   In men, he adds, the character of the mania is more violent and impetuous: consciousness of strength and the habit of command render them more audacious and more furious, more dangerous, and more difficult to restrain.   Women are more noisy; cry and talk more; are more dissembling, and less easily confide in those about them.

Before the age of fifteen, insanity is a rare affection: it then becomes not unfrequent, and when middle age is attained, with its occupations

and cares, affections of the mind are more common; being again less frequent (judging from the actual number of admissions) as age approaches. The attacks in early life are generally characterized by excitement, those of middle age more frequently assume the character of melancholy, and those of more advanced years of dementia; but these observations are liable, we presume, to numerous exceptions. Indeed, the proportion of individuals who, surviving till old age, then become insane, especially in the form of dementia, is considerable.

Among the predisposing causes of insanity, Dr. Prichard does not omit to make a few remarks on education; pointing out, especially, the evils of too great indulgence and a want of moral discipline, and an overstrained and premature exercise of the intellectual powers. Examples of the bad effects of the last-mentioned error are not rare; and it seems reasonable to suppose that a system of education calculated to inculcate habitual sedateness, and the restraint of violent emotions and passions, must tend to lessen the chances of attacks of violent mania. We are not, however, aware of any facts to which we could confidently point in proof of this not unreasonable supposition, although they might possibly be found in the statistics of insanity in the Society of Friends.

This subject is treated of by Dr. Prichard, in a section devoted to a consideration of the moral causes of insanity, and especially to the effects of religious impressions. It would appear that the number of insane in the Society amounts to nearly three in 1000; a very high proportion : but Mr. Tuke, who furnishes the details from which this proportion is computed, is disposed to doubt the data upon which the proportion of lunatics in England rests. Religious madness is very rare in the Retreat, or madness from intemperance, from disappointed affections, or domestic afflictions. Mr. Tuke also justly observes, that moral improprieties connected with mental peculiarities are more frequently stamped as insanity among quakers than in the world at large. Upon the whole, therefore, the presumption is, that there are fewer cases of insanity among them than occur in other sects.

The circumstance alluded to in a subsequent section on the Moral and Physical Causes of Insanity, that among savage nations, accustomed to indulge the most vehement emotions, mental disorders are considered to be rare; and the fact already spoken of, that women are not less prone to insanity than men, are not of a nature to encourage us to lay so much stress upon this class of causes as might at first sight appear reasonable : and, indeed, the impression upon our minds, made by some observation of the forms of insanity in individuals previously known to us, or whose previous habits and character we have been able to ascertain, is not that the majority of them were remarkable for great susceptibility to impressions, refinement of feeling, warmth of passions, or activity of mind, nor for having sustained great reverses or heavy afflictions. It is, however, to be stated, that the greatest number of inmates of the lunatic asylums of France consist of traders, merchants, and military men; persons who may be supposed to have been subjected to the extremes of hope and of disappointment. The various tables introduced into this section (Moral and Physical Causes) well merit the reader's attention; and they show, at least, that moral causes are more frequent than those of a physical kind.

Perhaps it will generally be found that private events, however appalling, and private afflictions, however severe, are less frequently productive of mental disease than those occurrences to which great publicity is given. The murder of the family of Marr, twenty years ago, in London, was productive of insanity in individuals, whom we have ourselves seen, in remote parts of the kingdom. The successes and the reverses, equally striking and dramatic, of the late emperor of the French, took possession of, and morbidly disturbed, many minds in many countries of Europe. Yet, even in these cases, it might be but the predominance of remarkable events in minds previously diseased, and prepared for usurpation by one idea. The history of France for forty years past has abounded in events so astonishing, or we might call them so romantic, that we can feel no surprise on finding that almost every change of the political scene has left its traces in the madhouses of Paris, as M. Esquirol says they have, from the taking of the Bastile to the last appearance of Bonaparte, and from that period to the present. Kings deposed, queens in obscurity, unrecognized dauphins, disregarded patriots, neglected commanders, emperors deposed, and chevaliers restored, abound in those institutions; just as, in our own establishments, are actually to be found zealous reformers in church and state, and clergymen alarmed to madness by the dread of Roman catholic ascendancy. These circumstances fix themselves morbidly on weak and wandering intellects, and utterly disorder them. Real and pretended discoveries in science have often the same effects: electrical experiments, phantasmagoria, animal magnetism.

The causes of melancholia are forcibly depicted by Esquirol, (vol. i. p. 422.) He enumerates among them the air of marshes, and, during the prevalence of particular winds, hot and dry countries. Melancholia is said to be frequently produced in dry and burning atmospheres, which exalt the sensibility and render the passions vehement. Such was found to be the case in Egypt and in Greece, according to Aretæus, Bontius, Prosper Alpinus, and Avicenna; and modern travellers have made similar observations in Asia Minor, Upper Egypt, Bengal, and the coasts of Africa. In the autumn of 1818, the summer of that year having been unusually hot in France, cases of melancholia were more numerous than usual; but the influence of the seasons seems by no means firmly established. Cases of melancholy appear, however, to be most frequently cured in the spring.

Children have been observed to become melancholy and delirious in consequence of jealousy, excited by the attentions of those to whom they were attached being given to others: they have become pale, and have sunk into fatal marasmus. Melancholia, sometimes of a religious kind, sometimes arising out of disordered passions, is observed at the period of puberty. In adult age, many causes excite it, both in men and women. In old age it is rare. The melancholic temperament is well known to be often associated with great talents, and great powers of application, for good or evil. Professions which excite the imagination and the passions are found strongly to predispose to it. Musicians, poets, but, above all, actors, are very liable to it. Errors in diet, and especially excess in drinking, directly tend to produce it; and Voltaire expressed an important truth when he observed that constipation exercised a disastrous influence on the determinations of the great. Impairment

of the functions of the skin has been thought to act as a cause; and sometimes the retrocession of eruptions. But disorders of the passions and affections are, according to M. Esquirol, the most frequent of all the causes of melancholia. The causes of this, as of other forms of mental disorder, do not always exercise their primary influence on the brain: their first effects are often produced on the abdominal viscera, and pass on to hypochondriasis, and from that to melancholia. Instances are mentioned in M. Esquirol's work, and have been the subject of separate observations made by him, in which the particular fancy and supposition of the patient in these cases arose from actual local disease; a point of some practical importance, although we apprehend its existence has scarcely yet been recognized in the greater number of lunatic asylums. Ulcers in the throat; chronic peritonitis; cancer of the stomach; gangrene of the transverse arch of the colon, have occasionally existed as causes of the phenomena from which hypochondriacs drew false conclusions as to the presence of living creatures in the abdomen or the throat.

The following tables, quoted by Dr. Prichard, illustrating the proportion of cases of insanity in the married and unmarried, are curious, and may supply matter for useful reflection.

"Total number of male lunatics, imbeciles, and epileptics in Bicêtre, January 1, 1822 764
"Total number of females in the Salpêtrière, at the same date . . 1726
"They are distributed as follows:

	Females.	Males.
"Unmarried	980	492
Married	397	201
Widowers and widows . .	291	59
Divorced	5	3
Not noted	53	9
Total . . .	1726	764

"In Germany the proportion of unmarried to married persons is much greater, as may be judged from the following numeration, which I take from Dr. Jacobi's *Statistik.* The total numbers of 1180 male lunatics and 835 females are thus distributed:

	Females.	Males.
"Unmarried . . .	599	974
Married . . .	156	176
Widowed . . .	80	30." (p. 185.)

Dr. Prichard observes, that if the disproportion displayed in these tables were found generally to exist, it would constitute a leading feature in the history of mental derangement; but that the reports of most hospitals are not kept with sufficient accuracy to determine the fact. The reader can scarcely fail to perceive that Dr. Prichard's references are almost invariably made to foreign authorities and foreign documents; and to interpret this circumstance into a tacit condemnation of our own establishments, if not of our own writers, too much, we fear, deserved. It is, indeed, surprising how little our large lunatic establishments have contributed to the general knowledge of insanity. The chief care seems to be devoted to the mere safe-keeping of the insane; and statistical information, and even the cure of the disorder, appear to be comparatively

overlooked. Lunatic asylums, instead of being hospitals, become show-places.

Among the moral causes of insanity, Dr. Prichard has discussed with great fairness and ability the comparative prevalence of insanity in different religious sects; and especially in Catholics and Protestants. The result seems to be, that strong enthusiasm, wild preaching, and vivid and fearful impressions produce madness in the followers of all sects.

The disregard of religion, prevalent selfishness, and want of domestic affections, are noticed by M. Esquirol as so many causes of disordered mind in his own country; and to these he adds a system of education in which the mental faculties are more cultivated than the affections of the heart. (Vol. i. p. 50.) These causes appear to be but too general in all countries. An important lesson may be gathered from the fact stated by Esquirol, that, of the moral causes of insanity, the most frequent are pride, fear, alarm, ambition, reverses of fortune, and domestic disquietudes (*chagrins domestiques*). Moral causes, he also remarks, are more frequent than physical causes of insanity.

After mentioning, among the physical causes of insanity, injuries of the head, Dr. Prichard alludes to some of those extraordinary examples in which the faculties were improved by such accidents. One of the innumerable points on which the wit of the opponents of phrenology has occasionally been exercised is the possibility of this occurrence; Dr. Gall, we believe, having related the case of an idiot who became very reasonable after falling out of a two-pair-of-stairs' window. It was even recommended that a hint should be taken from such an example for the enlargement of our curative resources, and that projection from the windows of upper stories should be added to other therapeutic agents for supplying the deficiencies in like portions of the human frame. These witticisms are shown by cases cited by Dr. Prichard, who abjures phrenology, to be quite superfluous: he says he has been informed on good authority that there was some time since a family, not far from Bristol, in which there were three boys, all considered as idiots; but that one of them having received a severe injury of the head, his faculties began to brighten, and he became a man of good talents, and practised as a barrister; his brothers, less fortunate, being still idiotic or imbecile. Like cases are also quoted from Van Swieten and Haller.

Exposure to the ardent heat of the sun has been a frequent cause of madness; and exposure to the heat of a fire has produced similar effects on cooks. The suppression of eruptions and discharges has long been noticed as an occasional cause; and Dr. Prichard adds, that he has seen some cases of mania supervening on inflammatory rheumatism which had subsided; "cases of very acute inflammation affecting the large joints, which had been reduced by too profuse bleedings, a measure which in this disease also gives rise to metastasis."

We find several details of interest connected with the subject of climate and season in M. Esquirol's treatise. The temperate climates, in which changes of the atmosphere are frequent, are the most productive of insanity. Excess of cold in Russia, and of heat in Egypt, produced many cases in the French army. The atmospherical commotions about the equinoxes are found to excite lunatics; they become more noisy, and demand more care. The admissions to the Salpêtrière are most numerous

in May, June, and July, and least numerous in February and March.
Some lunatics are so only in summer, and some in winter.   When an
attack shows itself in spring or summer, if it does not end promptly, it
is commonly prolonged to the winter.   The monomania and mania of
autumn only end in the spring.   Summer most favours the cure of de-
mentia.   Cures which take place in the hot season are rare, but of a
permanent character.   M. Esquirol has not been able to satisfy himself
with relation to the question of the moon's influence.   As regards the
epidemic character of madness, he observes that there certainly are years
in which, independently of moral causes, madness seems all at once to
appear in a great number of individuals. (Vol. i. p. 25.)

   The abuse of stimulating liquors is a frequent cause of insanity among
the English, the Germans, and the Americans; but rare among the
French.   Opium has sometimes had the same effect.   There is, as re-
gards both opium and mercury, a peculiar idiosyncrasy in some indivi-
duals, by which they are roused to extreme irritability, bordering on
mania, by these medicines; which, if the medicine is persevered in, may,
and which we doubt not in some cases has, gone on to mania.   Insanity
in consequence of sensual vices is probably more common in France than
in the countries above mentioned as so unfortunately distinguished by
excess in spirituous liquors.   We find frequent allusion in Esquirol, and
indeed in most of the works before us, to the serious consequences of
manustupration. It is possible, we think, that too much stress is laid upon
this habit as a *cause*, the actual circumstances of lunatics in confinement
being considered.   We must remark, that Sir William Ellis's attempt to
guard his general readers from details of this kind by putting them alto-
gether into an appendix, is likely to be as unfortunate in its result as the
very similar one of the editors of certain Classics for the Use of Schools,
who omitted objectionable passages in the text, but carefully collected
them all at the end of each volume.   Intestinal irritation has already
been alluded to; and the various states of the uterine system which lead
to insanity have attracted general attention.   An attempt has been made
to specify the state of the intestinal canal which is often connected with
mental disease; and Dr. Prichard's opinion concerning it is contained in
the following passage.

   "The state of the intestinal canal to which I allude is itself much more frequently
of an inflammatory nature than it has generally been imagined, or at least than it was
formerly supposed to be.   In that condition of the canal which gives rise to costive-
ness alternating with diarrhœa, and accompanied with indigestion, flatulence, and
eructations, anorexia and nausea, transient but often acute pains in the hypochondria,
livid and yellow suffusions of the skin, viscid secretions in the mouth, or redness of the
fauces and palate, with a glazed and dry surface, the whole train of symptoms often
depends upon a low degree of chronic inflammation in the mucous membrane of the
intestinal canal; and this is perhaps a frequent, if not an ordinary state, in those cases
in which disorders of the nervous system supervene on complaints of the stomach
and bowels.   This form of disease has been described by Dr. Ferriar and several
other practical writers; but it is to M. Broussais that we are indebted for a more
ample development of its pathology.

   "The enteric disorder, which lays the foundation for maniacal symptoms, as well
as for other affections of the nervous system, is the result in different instances of va-
rious and very diverse noxious causes.   The most frequent is excess in the use of sti-
mulant and indigestible food.   Too great indulgence of the appetite among the more
opulent, and among the lower classes long-continued constipation, unwholesome diet,

the use of salt provisions, exposure to cold and want, or neglect of warm clothing, give rise to diseases of the same description." (p. 206.)

Such is probably the explanation of many of the cases of insanity which occur in quiet parts of the country, as in agricultural districts, where insanity is by no means an uncommon affection: but we have little doubt that there are many shades of intestinal irritation, most seriously affecting the brain, short of the inflammatory condition. In towns and cities, especially in those in which the customary diet is stimulating, as it certainly is in Paris, the irritation may more frequently assume the inflammatory or sub-inflammatory character.

It would, however, be an error to ascribe all cases of insanity to intestinal disorder, in which marks of intestinal disorder existed during life or are found after death. Inflammation and ulceration of the mucous membrane of the intestines no more prove, as M. Esquirol observes, that that membrane was the seat of the origin of the disorder, than they prove, in phthisis, that the disorder begins there. Lunatics are obnoxious to many kinds of chronic inflammation; they become scorbutic; they become phthisical: we must expect, therefore, to find the intestinal mucous membrane diseased. (Vol. i. p. 87.) In three eighths of the cases, however, the same authority admits that the patients *die* of diseases of the abdomen; in two eighths, of diseases of the chest; and in two eighths, of encephalic affections. (p. 104.) These calculations are the result of the examination of about 600 cases after death. We must express our belief, founded in part on the Reports of lunatic establishments, that the corporeal ailments under which the unhappy patients languish and die are very often overlooked, and consequently are not met by proper treatment. The establishments, we have observed, are made a kind of show-houses: they should be hospitals for the complicated diseases which involve the functions of the mind. We grant that the mental malady may often be but the first sign of that total impairment of the frame which phthisis, or hydrothorax, or scorbutus, or paralysis, or marasmus afterwards more plainly declare; but we suspect there are cases in which, if the life of the patient were preserved through some of the maladies supervening on the mental disorder, the mind would be found to be restored, and the malady to be critical. With the present management of lunatic hospitals, these conjectures can neither be verified nor refuted. In many of them medical aid is considered to be nearly superfluous; and in some we are informed that the appointment of physicians in ordinary has been, if not rejected by the governors, at least subjected to grave debate, as if the county asylum were no more than a supplementary county-jail.

Pinel observed that lunatics are liable to sudden and fatal attacks of apoplexy, particularly in winter. It is most common in the old. All at once the most violent fury or delirium ceases, and in a few moments the patient dies; as if all the forces of life were exhausted. (*Esquirol*, vol. i. p. 107.) In one case, that of an emaciated man of seventy-two, there had been continual delirium with agitation for three months: the patient, on awaking, very calmly asked his servant for his snuff-box, took a pinch of snuff, and expired. Putrefaction of the body proceeded rapidly, and no alteration was found within the cranium.

M. Esquirol maintains that insanity may be either continued, remittent, or intermittent. In the continued form there is an acute stage,

with concomitant symptoms; then a chronic stage of simple delirium; and a third stage, in which the attack declines. Remittent cases present remarkable anomalies, both as to the character and duration of the complaint: a patient may be three months melancholic, and three months maniacal, and then four months or more in a state of dementia; and so on successively, with more or less regularity. Some maniacs are only violent at certain times of the day, or on certain days or seasons. Intermittent cases may be quotidian, tertian, quartan, monthly, annual. (Vol. i. p. 79.) He thinks, also, that the doctrine of crises is applicable to cases of insanity; and that a cure unmarked by a crisis is not to be depended upon. Sometimes, as he expresses it, the disease terminates by resolution, and sometimes in a predominance of the absorbent system; the patients become fat, and the delirium disappears. If the delirium continues, the obesity is a sign of dementia. In other cases, emaciation advances almost to a fatal point, and then recovery takes place. These terminations M. Esquirol considers to be critical. Many cases are resolved by fever. The appearance and the disappearance of the catamenia often prove equally critical. Among the cutaneous diseases which by their appearance put an end to madness, M. Esquirol mentions the itch, according to the opinion of Hippocrates. Persons of acute sensibility well know, we presume, what it is to go through the actions of crying, and yet not to shed a tear. Maniacs are subject to this; and, when they do shed tears, a cure sometimes follows. A transpirable state of the skin, restored by warm baths or by the return of spring, is often very serviceable. Several interesting examples are mentioned of cures effected by moral impressions: in one of the cases, a man, on his way to drown himself, was attacked by robbers; he defended himself stoutly, and got rid of his madness.

In the fifth chapter of Dr. Prichard's treatise the very various morbid appearances detected in the head in cases of insanity, by Morgagni, Greding, Haslam, Pinel, Esquirol, Georget, Bayle, Calmeil, and Foville, are clearly reviewed; and although they do not, perhaps, conduct the reader to very positive conclusions, certainly deserve his attentive consideration. The results of M. Foville's examinations are not yet very familiar to English students. In acute cases, he has observed intense redness of the surface and of the substance of the grey matter, without any adhesions of the membranes to it; such adhesions being, he thinks, a characteristic of the chronic cases, connected with their incurability. In the chronic cases, the cortical substance, to a certain depth, was found firm and dense, constituting a distinct lamina; which, when torn off, left the remainder of the cortical substance red, soft, and mammillated, somewhat resembling granulations: in these cases the surface of the cortical substance is very pale. The volume of the convolutions is either natural or diminished. There is sometimes a real atrophy of the convolutions, which is frequent in the frontal regions of the hemispheres; and a chasm filled with serosity occupies the place of the absorbed substance. The diploe disappears in these cases, the external lamina of the cranium approaches the internal, causing a superficial depression on the head. Softening of the cortical substance is also a phenomenon observed in chronic cases; an equal softening of the whole cortical substance; and this is sometimes coexistent with increased hardness of the medullary

portion. It would seem that these appearances belong to cases of the last degree of dementia, with general paralysis and marasmus. The colour, density, and texture of the white substance also are not unfrequently altered in the brains of lunatics: it is sometimes more or less injected: sometimes of a splendid white colour, and increased in hardness; an effect which M. Foville tries to account for by supposing that each cerebral fibre has contracted adhesions with the surrounding fibres. Sometimes the brain is full of serous fluids; and sometimes limpid fluid is collected in numerous small cavities, from the size of a millet-seed to that of a nut, and supposed to be the sequelæ of extravasations.

The changes which have been observed by M. Foville in the membranes are, in acute cases, injection of the pia mater, the arachnoid preserving its natural aspect: in chronic cases, the arachnoid is opaque and thickened; granulations and pseudo-membranes are formed on its surface, and serosity is effused into the cellular tissue of the pia mater and the ventricles.

These appearances, M. Foville remarks, are all indicative of inflammatory disease, affecting the brain itself; the changes in the membranes being only accidentally complicated with it; an opinion quite opposite to that maintained by M. Bayle, who considers insanity to be the effect of inflammation of the membranes. The few consecutive necroscopical observations made in our own lunatic establishments, if they do not entirely countenance the opinion of the invariable existence of the appearances described by M. Foville, are at least insufficient to contradict it; although it is possible that the desire to maintain particular views may have exercised an unconscious influence on M. Foville's powers of observation. The whole history of medicine tells us to distrust the most those systems which appear the most imposing by their uniformity and simplicity. When will our large public institutions for the insane assist in the elucidation of these questions?

The most constant changes observed in connexion with mental affections are found, according to M. Foville, in the cortical substance of the brain; and he considers the view of M. Calmeil, who ascribes the paralysis to these changes, as incorrect; the paralysis being always attended by some alteration of the white substance, superadded to the cortical change.

" A very remarkable case, which occurred in the clinical course of M. Esquirol, in 1823, affords strong evidence in favour of M. Foville's argument. The cerebrum of an idiot displayed the grey substance of both hemispheres in the last stage of atrophy and disorganization, while the white portion of the brain remained perfect on one side. In this person the intellect had been entirely defective, but the muscular power on one side only had failed. From this and similar observations, M. Foville concludes that the function of the cineritious portion of the brain is essentially connected with the intellectual operations, and that of the fibrous or white structure with muscular action." (p. 225.)

The case here adduced in support of the opinion is extremely interesting; but the opinion itself is by no means a new one. M. Foville's principal inferences, however, are, that morbid changes in the cortical substance are directly connected with intellectual derangement, and changes in the white substance with disorders in the motive powers.

In cases of puerperal madness, the paleness of the brain, and the absence of the changes above mentioned, have led M. Foville to consider

this form of mental disorder to be the result of some deeply-seated disease of the uterus or abdomen. There can be little doubt that the contradictory evidence given by different observers of the appearance of the brain in insanity is, in part, to be accounted for by the existence of cases in which the affection of the brain is merely functional and sympathetic; the primary disease being in some other organ, especially in some of the abdominal viscera.

We consider the observations of M. Esquirol, in relation to the morbid appearances, and to the conclusions to be drawn from them, as highly worthy of being remembered. The various states of the cranium and the brain compatible with integrity of the cerebral functions should be scrupulously ascertained; and the appearances resulting from or belonging to concomitant maladies be carefully distinguished from those which belong to the mental affection. The existence of organic lesions of the brain is declared by symptoms distinct from the madness: chronic inflammation produces compression and paralysis, and paralysis results from cerebral hemorrhage: tubercles, tumours, and softening of the brain have their peculiar symptoms, which cannot be confounded with mental alienation. Moreover, the sudden and instantaneous relief experienced in some cases of madness is not to be forgotten. Two circumstances, also, mentioned by Esquirol, when enumerating the morbid appearances actually found in different cases, ought ever to be borne in mind; namely, that, in many dissections of lunatics, no alteration of any kind has been found, although insanity had existed for many years; and every part of the brain has been found altered, suppurated, destroyed, without chronic lesion of the understanding. (Vol. i. p. 113.)

The maniacal form of insanity is, M. Esquirol says, rarely fatal. The patients do not die of the cerebral affection, but of typhus fever, phthisis pulmonalis, and epileptiform convulsions. They die suddenly, as if the sensibility necessary to life was exhausted. In a case previously mentioned, in which death took place in this manner, no cerebral lesion was found after death; and the same was observed in the case of a young woman who was accidentally killed in a state of recent and furious mania. Sometimes the brain and its membranes are found uninjured when the disease has lasted some years. When a case is watched during life, he thinks the epoch in which the cerebral lesion commences may be known by the symptoms. When mania has existed long, he is of opinion that the weakness of the last days of life disposes to local inflammations. Upon the whole, he concludes that, notwithstanding the labours of MM. Foville, Calmeil, Bayle, and Guislain, pathological anatomy has not yet declared the organic reason of mania. "Thirty years ago," says this veteran observer, "I should have written willingly on the pathological cause of insanity: I will not now attempt so difficult a labour, such are the uncertainty and contradiction in the results of the examinations of the bodies of lunatics after death up to this day. But I add, that modern researches permit us to hope for more positive, clear, and satisfactory notions." (Vol. ii. p. 181.)

Severe diseases of the lungs, obscure or unsuspected during life, appear to be very common in cases of insanity: even cavernous excavations, when no expectoration has been observed. Diseases of the heart are frequent attendants on insanity; but the nature of the relation of these,

as well as of the pulmonary affections, to the insanity, is not clearly established. They are probably not to be looked upon as causes. Of abdominal affections existing in cases of insanity, inflammation of the mucous membrane of the alimentary canal seems to be the most common. M. Esquirol, some time ago, described a displacement of the colon, which he had observed in several examples of melancholia. The colon, in these instances, had assumed a perpendicular position, its left extremity descending to the pelvis behind the os pubis. If the state of the liver has often a close connexion with insanity, as has been so long and generally considered, this organ is, at least, seldom found to have undergone structural change in such cases. A great number of melancholic patients are found to die of phthisis pulmonalis; many die of abdominal diseases; but organic alterations in the intestines are rare in them. (*Esquirol*, vol. i. p. 464.)

As insanity appears in some instances to arise from direct disorder in the brain, without structural change, and sometimes from evident disease of that organ; as in other cases it appears to be occasioned by the disease first affecting other organs, as the liver, intestines, uterus, &c., and secondarily affecting the brain; and as, in addition to these cases, there are probably others in which, the first impression being made on the brain, a secondary effect is produced on the liver, intestines, uterus, or other organs, from which a reflex action and more intense disorder is occasioned in the brain; it cannot occasion surprise to find what ingenious disputes have hence arisen among pathologists as to the first cause of insanity: some maintaining it to be a disease of the mind, some that it is always idiopathic, and others that it is an entirely sympathetic disorder; the source of which has furnished yet further subject of controversy.

Dr. Prichard maintains that, in a great proportion of cases, the whole train of phenomena depends upon inflammation of the brain and its membranes; and that in the rest there is every reason to believe that a condition of the brain is primarily or secondarily induced which has a tendency to put on an inflammatory character; and he observes, that, in cases of long duration, the disorganization of the brain which renders recovery impossible, or generally precludes it, is produced by inflammation. These opinions have, of course, an important bearing upon the treatment.

Treatment of Insanity. We observe in M. Esquirol's volumes occasional regrets expressed that so little effort is made to make lunatic asylums places of instruction for pupils. Mr. Farr also alludes very strongly to this subject. Of the practicability of this, under certain obvious regulations, no doubt seems to be entertained by him; and a similar opinion is given by Sir W. Ellis, and by Mr. Browne, whose work on Lunatic Asylums we noticed in a former Number. This subject was earnestly advocated, but without effect, ten years ago, by the professor of medicine, on the establishment of the medical school of the London University. Up to this period very little has been done to facilitate the acquisition of a knowledge of the practical details of the very serious class of mental disorders; and, although the interests of the public imperiously demand that medical practitioners should be furnished with more exact notions and indications of treatment in the various cases received

into asylums for the insane, there has not yet been found sufficient moral courage in the managers of any of the great public institutions, or sufficient enterprise in any medical school, to establish clinical instruction on a scale sufficiently extensive, or a plan sufficiently systematic, to diffuse a general acquaintance with the phenomena and the therapeutics of insanity. In this state of things, the practical experience of those who have had the care of many lunatics, and who communicate the results of their practice to the public, ought to be attentively considered.

We should first, well observes M. Esquirol, endeavour to ascertain if there are any urgent indications to be fulfilled. When there is lively excitement and plethora, bleedings, and tepid baths in which the patient is kept a long time, cooling drinks, laxatives, light diet, and sometimes counter-irritants applied to the skin, almost always produce a remission, and sometimes a very marked intermission, in eight, fifteen, twenty-one, or thirty days. Time is then afforded to consider and combat the causes of the disorder. If hemorrhages which were customary have been suppressed, if an ulcer has dried, or a cutaneous affection disappeared, previous to the outbreak of mania or monomania, the reappearance of these will almost certainly cure the mental affection. (Vol. i. p. 145.) If this effect should not follow, we may then have recourse to *empirical* treatment.

Dr. Prichard arranges his practical observations under the two natural heads of the Therapeutical and the Moral; the latter being a term commonly used by writers on disorders of the mind, to express a combination of mental with moral means of forwarding the cure. For the sake of order, we shall arrange our observations according to this unexceptionable division; which is also that adopted by Dr. Ferrarese.

Therapeutical Treatment. The indications belonging to this head, as laid down by Dr. Prichard, differ in nothing from the general indications of cure in all other diseases; the first object being to restore, if possible, the diseased organ to a state of health; an indication chiefly, but not exclusively, applicable to the acute stage and early period of insanity. The second indication " is to restore and maintain, as far as it can be done, a healthy condition of the physical or natural functions, and to obviate or remove disorders in other parts of the system, which may be connected or coincident with the diseased condition of the brain." (p. 275.) This indication is evidently in some degree involved in the first.

In discussing the different particulars comprehended in the therapeutic treatment, Dr. Prichard manifests his usual excellent judgment, reviewing each candidly and deliberately, and expressing his opinions with calmness and discrimination. He assumes, as we have before observed, that the condition of the brain usually connected with disordered manifestations of mind is one of excitement passing on to inflammation; but he cautions the reader against therefore concluding that the disease is certainly to be cured by antiphlogistic measures (p. 251); inflammatory excitement, he observes, being but a part of the disease, and not wholly constituting it. In many patients, an active adoption of antiphlogistic measures, whilst it would not subdue the disorder, would exhaust the powers of life. This is one of the points in the treatment of the insane on which we have repeatedly observed medical men at fault: nor can we

wonder that they should be so: nothing but a larger acquaintance with
cases of insanity than usually falls to the lot of private practitioners
seeming sufficient to show, beyond doubt, that cases presenting, as it
would seem, very manifest signs of arterial excitement, especially affect-
ing the brain, will not be benefited by,—will not even bear without
exasperation or unfavorable result of some kind,—the treatment which
vascular excitement seems plainly to require. The clinical practice of a
well-managed asylum could alone throw full light on this and on many
other parts of the treatment; for there are cases of insanity, particularly of
recent date and in vigorous persons, in which antiphlogistic measures
are found to be of immediate and important service. The opinion of
Pinel, that bleeding increases the tendency of the disorder to pass into
dementia is, Dr. Prichard remarks, deserving of attention; but he quotes
the testimony of Esquirol in favour of moderate bleedings in plethoric
cases, and particularly by a few leeches applied at a time, with cold ap-
plications to the head. Dr. Haslam, Dr. Rush, and Joseph Frank,
were much warmer advocates for bleeding; and M. Foville, observing
that adhesions are very common in chronic cases, and very rare in acute
ones, and, when they have once taken place, are incompatible with the
return of reason, concludes that bleedings, general or local, are of great
importance in the greater number of recent cases; in which opinion
Dr. Prichard coincides. (p. 258.) His observations on the particular
cases that call for bleeding are especially deserving of every practitioner's
reflection. After specifying these cases, Dr. Prichard does not conceal
the remarkable fact that, in the Gloucester Lunatic Asylum, under the
superintendence of Dr. Shute and Mr. Hitch, "the use of the lancet,
leeches, cupping-glasses, blisters, drastic purgatives, the practice of
shaving the head, are totally proscribed;" and yet that recoveries take
place in a large proportion, and *no cases* of sudden apoplexy or hemi-
plegia have occurred. (p. 261.)

Sir William Ellis makes some important observations on this head: he
says that many of the patients received into the hospitals as recent cases
have been previously bled to excess, so that the constitution cannot
rally, and a much greater mortality takes place in the recent cases than
among the old. There is a greater probability of cure, he thinks, in
cases in which the cause is permanent, if the attack is allowed its own
course, than when the powers of the constitution are wasted by excessive
depletions. (*Treatise*, p. 150.) Except in actual phrenitis, and in cases
arising from physical injury, he scarcely thinks free bleedings allowable.
In cases acknowledging a moral cause, he is convinced that the patient
generally requires to be supported, although local bleedings may be very
serviceable. (p. 168.) He says also, that, in many cases of insanity
manifested in particular propensities, he has found a greater degree of
heat in the scalp covering the region of the brain assigned by phrenolo-
gists to such propensity; and the patients have so generally complained
of pain in that locality, that, when they are silent, he is governed by the
character of the existing derangement in the local application. This
kind of evidence is open to obvious objections, and yet may be perfectly
true. A more important observation made by Sir William Ellis is, that
by small local bleedings, promptly had recourse to on the appearance of
the symptoms of a renewed attack, in chronic cases, a patient, who

would otherwise suffer for months, may often be relieved in a few days. (p. 249.)

In the acute stage of mania it is best, according to Esquirol, (vol. i. p. 140,) that the patient should be in a cool and dark place, as recommended by the ancients; but, in the chronic stage, he agrees with Pinel that they should be allowed free scope for their activity in the open air. When the disorder has come on in a hot climate, a return to a cooler increases the chances of recovery, and *vice versâ*. The clothing, especially of the melancholic, should be of woollen, even next the skin; and frictions of the skin are found useful. Esquirol recommends a mattress, a bolster, and a pillow of horse-hair: the coverings should be light, and the head uncovered.

Shaving the head once or twice a week is spoken of with approbation by Dr. Prichard. The cold shower-bath is chiefly applicable to young persons: in cases of much excitability, the reaction is an objection to its employment; and there is danger, in old cases with a disposition to congestion, of producing paralysis. Pouring small quantities of cold water on the head until it covers the body and produces shivering, has sometimes been useful. Placing a patient in the warm bath, with ice constantly applied to the head, has also been of much service; but the patient requires to be put into the bath more than once a day, and for two or three hours each time. Warm or tepid bathing is often of much use to those patients in whom the skin is cold and the circulation languid. By all these methods of bathing, sleep is often obtained, and the agitation strikingly diminished. Dr. Ferrarese urges the necessity of keeping the patient a sufficient time in the warm or tepid bath; and M. Esquirol seems to approve of the use of the tepid bath in meager, nervous, and very irritable subjects, prolonged for several hours: cold should be applied to the head at the same time, either by means of cloths dipped in cold water, or by cold water contained in a bladder. Sir William Ellis recommends pounded ice in a cap of waterproof cotton. The cold bath agrees very well with young and robust subjects, who suffer much from heat. For subjects enfeebled by vicious practices or long solicitude (*chagrins*) the plunge bath and cold affusions are suitable. Several cases of mania are related by M. Esquirol, (vol. ii.) in which affusion was singularly serviceable. Pinel proscribed, and M. Esquirol has never employed, the "bath of surprise;" not only conceiving, probably, that little good was to be expected from throwing an unhappy lunatic into water unexpectedly, and allowing him to be nearly drowned, but for the more serious reason, it would seem, that he knows it to have been fatal. (Vol. i. p. 147.) He avows, in fact, that he does not think it preferable to throwing the patient out of the third story, on the principle which we have already alluded to.

We never fail to find M. Esquirol calm and judicious in his estimation of remedial means. Although he speaks of the *douche* as refreshing and sometimes useful to lunatics who are young, strong, and active, and particularly where there is pain of the head, calming their fury, and reducing them to obedience; he also points out that, when received on the head, it exercises a sympathetic action on the epigastrium, causing pain and an inclination to vomit; and that, after its action, the patients are pale, and sometimes *yellow*. It should never be exhibited after a meal;

and the first passages should be cleared before it is taken. It should not be continued more than a few minutes; nor should its application, which sometimes produces serious accidents, ever be intrusted to servants.

In some cases of stupor, small quantities of water thrown upon the face have occasionally been serviceable.

The use of blisters and counter-irritation by the tartar-emetic ointment, and of setons and issues, is more limited than might be expected; being chiefly confined to the chronic forms of the disease, to monomania accompanied by stupor, and to cases characterized by torpor and insensibility. In cases of paralysis, with a tendency to coma and lethargy, Dr. Prichard has found these remedies decidedly advantageous. He considers setons best adapted to disorders of a chronic form; "but when there is great intensity of disease, and a state of the brain threatening a fatal increase, issues made by a long incision in the scalp over the sagittal suture are particularly useful." Dr. P. has found this means more beneficial than any other in stupor and dementia following attacks of apoplexy, or paralysis, or severe fevers; and he would adopt it in the general paralysis of insane persons, although, as might be expected in a disease of which we have seen that M. Esquirol considers the course rapidly progressive, not with very sanguine hope of benefit. We do not find M. Esquirol speaking hopefully of setons, or even of the actual cautery applied to the back of the neck in these cases, (vol. i. p. 154;) although this method has sometimes been used with success in furious mania. The cases in the second volume (p. 216,) would incline us to ascribe much of the good effect of this means, when it succeeds, to the fright which it occasions. In all cases of insanity, the moral effect even of physical remedies requires to be taken into the account.

The utility of purgatives has been long established. They are, however, sometimes of very little service; and, in particular states of the intestinal canal, hurtful. One of the critical terminations of insanity, occasionally occurring, is diarrhœa.

In the management of an insane person, a practitioner must now and then expect to find opposition to medicine, in consequence of the patient believing himself to be in much better health than usual. In these cases, Esquirol observes that if some medicine is given without the patient's knowledge, and which excites pain and evacuations, it causes him to become more anxious about himself, and makes him also more docile. He has not found external frictions with purgative substances effectual; and this would either seem to have been commonly the case, or this otherwise convenient method of employing such medicines in cases of lunacy has not attracted much attention.

Somewhat conflicting testimony exists respecting the good effects of emetics. It has been, it seems, for many years, the practice in the Bethlem Hospital to give the curable patients four or five emetics in the spring of the year; in Dr. Haslam's opinion, without benefit. Dr. Cox strongly recommends them; and Dr. Wake has found them very efficacious in the York Asylum. It is obvious that the use of such remedies should not be indiscriminate; but they may probably be found advantageous in cases of melancholia with stupor, and even sometimes during furious excitement, in which their exhibition is said to have been found to be followed by tranquillity and by sleep. In cases of violent excitement,

six or ten grains of tartarized antimony are required to produce vomiting; but Dr. Prichard recommends that moderate doses be begun with, combined with ipecacuanha. Nauseating doses of antimony are certainly often serviceable in controlling maniacal excitement. In violent cases, Sir William Ellis speaks highly of the effects of half a grain of tartar emetic given every three hours, combined with sulphate of magnesia, until copious vomiting and evacuations are produced. This is rather severe practice, however. We are still less inclined to think, with Sir W. E., that the nauseating effect of antimony is advantageous in melancholia; the miseries of which it can scarcely lessen.

Where there is considerable excitement of the heart and arteries, digitalis, so much extolled by Dr. Cox, and on the continent by Müller and Guislain, will probably be productive of relief. In the Hanwell Asylum it has been found useful as a means at once of reducing the circulation and increasing the urinary secretion, to give fifteen drops of antimonial wine, and half the quantity of the tinctures of digitalis and of squill, with fifteen of the spiritus ætheris nitrici, and ten grains of nitre, three or four times a day.

We believe that opium and other narcotics have, during late years, been used in some of the asylums in this country, with a degree of boldness of which the profession in general is not at all aware; and, if we are rightly informed, with proportionate success. Dr. Prichard, whilst he admits that opium is in some cases decidedly useful, advises caution in its employment; and he considers it *generally* injurious when the vascular system of the brain is overloaded with blood. (p. 269.) He has seen apoplexy, in such a state, supervene on its administration in a moderate dose: but, he adds, "there is a condition of the living body, produced by long-continued excitement or stimulation, when the powers of reaction are beginning to be exhausted, and what the Brunonians term indirect debility ensues, in which the sudden abstraction of stimuli gives rise to extreme prostration;" and in this state, as in delirium tremens, he thinks that opium may be beneficial, "by sustaining the vital actions in a certain degree of energy until the restorative powers of the constitution can come into play, and exert their usual influence." (p. 269.) In cases of long-continued restlessness it would appear clearly indicated. Moderate doses are not, we think, usually very satisfactory in their results. Van Swieten, Cullen, Darwin, and Klieber of Berlin, are quoted as having given it in large quantities; but Dr. Prichard is of opinion that the maximum of a first dose should perhaps be two grains. (p. 271.) Sir William Ellis says little in its favour; asserting that "it more frequently creates heat and general febrile action than procures sleep." If given at all, he is of opinion that it should be in conjunction with ipecacuanha. (p. 171.)

Hyoscyamus is sometimes very useful, in full doses; but, according to Dr. Prichard, not a remedy of much importance. We have also certainly observed, in many instances, the languor and uneasiness attributed to its administration; but there are cases in which its influence is marked and salutary. Camphor has been strongly recommended, but we do not think that English practitioners have much experience of its effects in maniacal disorders. To allay the irritability of incipient insanity, and that which attends the exacerbations in old cases, is certainly a deside-

ratum in medicine; and we wish we could entertain the consolatory belief professed by Sir William Ellis, (p. 187,) that there is in nature some un-discovered medicine which would act as a specific in these cases.

Mercury, which has been recommended for everything, has been largely employed by some physicians, in this and other countries, in cases of insanity. Such cases may occasionally depend on causes removable by this valuable remedy; and, as Dr. Prichard observes, it may be expected to be especially serviceable in cases of torpor, with defective secretions. But its general employment is, we are well convinced, very hurtful; and in some cases productive, we suspect, of great irritability of the brain.

That there are cases of mental disorder in which tonic medicines and diet are of extreme importance is agreed by all who have much acquaint-ance with these disorders. The general opinion given of these and other medicines by M. Esquirol perhaps conveys an idea of the result to be expected. "Camphor," he says, "musk, iron, quinia, antimony, have often been employed as specifics in insanity. These medicines are useful, but of an individual utility; they succeed marvellously when we are happy enough to seize the proper indication for them; but they are dan-gerous and hurtful if applied to all patients." (Vol. i. p. 153.)

M. Esquirol has been, he says, quite unsuccessful in his attempts to cure madness by *magnetising* the patients: he gave the plan many trials, with different magnetisers, without advantage.

We have always entertained some doubts as to the propriety of reducing a refractory patient to obedience by putting him in a chair subjected to rapid rotatory motion; being inclined to class this device, as well as the "bath of surprise," with other species of torture formerly too common in cases of insanity, but now happily abolished. As a remedial means, however, it is impossible to deny that practical men consider it occasion-ally useful and advisable. It induces nausea and sickness, which have been found to put an end to paroxysms of violent excitement. It is requi-site for the success of this means, that the rotatory motion should be con-tinued until vomiting is induced; and as sickness, and violent purging, and fainting, and great prostration of strength, and sometimes epistaxis, and a threatening of apoplexy, are among its consequences, we are glad to learn from M. Esquirol that its use is abandoned in the French asylums." (Vol. i. p. 156, *note.*)

The most difficult task for the practitioner must often be to ascertain on what condition of certain organs, remote from the brain, the cerebral irritation depends; and yet this knowledge must of course in such cases precede the due employment of means of relief. In cases of long con-tinuance, the period has generally passed in which treatment directed immediately to the condition of the brain is likely to be very serviceable, and some removable chronic disorder may exist in the chest or abdomen, and on its removal the mental affection may undergo considerable or com-plete alleviation. The fact, spoken of by Dr. Prichard as established, (p. 275), that many lunatics have been cured by a course of remedies adapted to the restoration of their general health is of very great practical importance. M. Esquirol says that the chances of cure in insanity, but especially in melancholia, always offer more hope when we are able to perceive some disorder in the functions of assimilative life. (Vol. i. p. 476.) In the Gloucester Lunatic Asylum attention to the general health seems

to be the principal indication of cure that is regarded; not only in old cases, but in instances in which the disease is in a stage of *incubation*, and with the effect, Mr. Hitch assures Dr. Prichard, of preventing such cases passing on to actual mania. The medical treatment called for in each case in which the mental disorder depends chiefly or entirely on some disordered condition of the heart, the liver, the stomach, the intestinal canal, the uterus, &c. must of course vary in each particular case, and be conducted on general principles. It has been found that in exhausted subjects the adoption of a liberal diet is often followed by the best effects; even calming existing irritation. Various kinds of employment in the open air are also now adopted, with excellent results, in all well-regulated asylums.

Some practical observations of M. Esquirol in relation to paralytic lunatics are of much consequence to those who have the charge of them. They eat voraciously, and permit enormous quantities of food to collect in the pharynx, which sometimes they are unable to swallow; they consequently become threatened with suffocation, from which nothing but prompt aid can save them. One case is related in which the patient had several times nearly choked himself with calf's head, and at length, attempting to swallow a larger morsel than usual, could not be relieved from it, and died. The œsophagus was found greatly distended by a piece of calf's head impacted in it; the brain was very red, the membranes were thickened and injected, and the lungs were gorged with blood. (Vol. ii. p. 279.) Another circumstance which requires vigilant attention is the obstinate inactivity of their bowels; the rectum being paralysed, defecation becomes almost impossible: the bowels may remain in this state twenty or thirty days without any complaint being made by the patient; and inflammation and mortification may be the results. Purgatives and frictions of the abdomen have no effect. Sometimes it is necessary to unload the rectum by mechanical means. Retention, but more frequently incontinence of urine, are also among their afflictions: patients in the latter state require great attention to their bedding and clothing, and washings with aromatic infusions or spirit and water. Paralytic patients frequently allow themselves to be burnt by the fire, and even dangerously, without complaining: they are also liable, in endeavouring to change their position, to fall on the head, and die in a few days afterward. When these consequences have followed a fall out of bed, M. Esquirol has several times found ecchymosis of the dura mater, extending to the subjacent arachnoid; or a circumscribed sanguineous effusion, membraniform, and extended over the outer layer of the arachnoid.

So many large and even splendid asylums for insane persons are now established in several of the countries of Europe, that one would suppose there is little necessity now existing for enforcing the value of a well chosen site and a well ordered building, and dry and cheerful airing grounds. The evils which remain, in this respect, in this country, are not to be met with in the public institutions, nor even, we hope, in many of the private establishments; although some of the latter there undoubtedly still are in which a want of space and of proper ventilation, and of a sufficient number of attendants, and general arrangements for comfort and cure, are but too obvious. That the results are lamentable

on the health of the unlucky inmates we feel perfectly assured; as indeed no one can doubt without doubting the justness of M. Esquirol's observation, that the constitution of lunatics has a tendency to become rapidly weaker. They contract, he says, diseases of the skin, lymphatic engorgements, and scorbutus; and these, he says, are reasons for care in the selection of the site and design of buildings for their habitation. How rapidly old-looking they become, every practitioner must have observed; and in some of the old-fashioned institutions we fear that some of those terrible examples are even now sometimes to be seen, which were formerly far more common, of the extremest bodily and mental helplessness induced by positive neglect; neglect of cleanliness, want of good air, and of sufficient clothing, and of proper food either for body or for mind.

We have thought it desirable to allude to the opinions of some of the experienced authors whose works we are now considering on the medicinal treatment of lunatics; because it includes many particulars concerning which practitioners of great judgment and candour are found to differ; and these particulars are so important as to deserve careful reflection and clinical experiment. With regard to the mental and moral treatment of the insane, it is consolatory to believe that few, if any, medical men are now unacquainted with the principles on which such delicate attempts at control and management should ever be conducted. In the section devoted to this part of the subject in Dr. Prichard's work, and in various parts of M. Esquirol's writings, the reader will find an ample exposition of all that it is most requisite to keep in mind in the attempt to perform duties of a most arduous and responsible nature. The separate questions, all of which at some time or other occasion anxiety in every practitioner's mind, of the seclusion of insane patients, of removing them from particular impressions and associations, of the extent and nature of the control to which they should be subjected, and of the management of the infirm understanding, are fully discussed by both these distinguished writers. These questions comprehend so many interesting topics that we must even at present refrain from their enumeration, strongly recommending to every student the perusal of those parts of the works which we have mentioned in which these matters are spoken of with the fulness which is due to their importance. In an especial manner we would direct the reader's attention to the section on the treatment of *mania* in M. Esquirol's second volume; page 187 et seq., wherein he will find most important principles illustrated by very striking examples.

One observation, however, suggests itself very forcibly to the mind on perusing M. Esquirol's admirable remarks on the advantage arising to the medical attendant on the insane from a friendly and almost constant communication with them; as well as from several remarkable examples related by him of the effect of moral impressions made on the patients. The first idea of the treatment applicable to each case, he says, is often derived from something observed in the actions, the looks, the aspect, the conversation, or the gestures, and in shades of these which are imperceptible to others. (Vol. i. p. 116.) And again, speaking of the treatment of cases of melancholia (p. 465), he observes that the moral medicine which seeks in the heart the primary causes of the malady, the medicine—which pities, weeps, consoles, partakes the sufferings and reawakens the hope of the patient, is often preferable to all other. Every

melancholic patient, he adds, (p. 472,) must be controlled by a perfect
knowledge being acquired of his mind, his character, and his habits. We
need not accumulate passages expressive of the same opinions: but need
we remark, that to expect that medical men should, generally speaking,
possess the delicate knowledge here spoken of by Esquirol, possessing, as
they at present do, so few opportunities of studying these indications of
the degrees and shades of disordered mind, would be visionary in the
highest degree. Until opportunities are enjoyed by students of seeing
lunatic patients with as much facility as other patients, it will be vain to
expect much improvement in their treatment; the care of which will con-
tinue necessarily to devolve for the most part upon men of some practical
acquaintance with asylums, but who have not had the preparatory educa-
tion requisite for effecting improvement, or for conducting the cure of the
various and delicate cases intrusted to them on enlightened principles.

   When the actual responsibility of a patient affected with mania devolves
upon a practitioner, the immediate difficulty which besets him is that of
preventing the patient from injuring himself or those around him.
Timid attendants and alarmed relatives look for prompt aid and security
to the medical attendant, and he must be prepared accordingly.   For
want of moral courage, or other and better resources, mere force and
severity are often resorted to, and the unfortunate patient is injured, and
obstacles arise out of the injudicious cruelty with which he is treated which
may impede eventual recovery.   Firmness and kindness,—perfect firm-
ness, and kindness not to be averted from its objects by the perverseness
of the patient, will be found more powerful than threats and severity.
Dr. Prichard quotes the excellent directions of M. Georget, as condensing
the discursive opinions of Pinel and Esquirol on some of these points.
(p. 299.) It is not to be forgotten that patients who manifest a tendency
to suicide, murder, or other violence, must never be lost sight of, or trusted
with the means of mischief.   For these, and often for patients addicted
to indecent practices, a strait-waistcoat is necessary.   Sometimes it is
better to shut them up in their rooms; or to confine them by straps round
their legs, fastened down in an arm-chair.   When the use of chains was
discontinued, by the philanthropy and courage of Pinel, it was found that
the number of furious lunatics was diminished, and the accidents which
formerly occurred became less frequent.   The strait-waistcoat, seclusion,
removal from one part of the asylum to another, the shower-bath, and
occasional privations, are the means found most efficacious in public
institutions.   It is particularly remarked by Esquirol that a violent
lunatic is only the more enraged if opposed by one or two keepers;
whereas if a great force is brought to bear upon him at once, or six or
eight keepers are brought before him, he will desist from all violence and
submit.   If necessary, he may be approached and seized on all sides; or
he may be bewildered by his head being suddenly enveloped in a napkin.

   M. Esquirol's plan in the first period of *maniacal* insanity is to place
the patient in a room freely ventilated, but admitting little light, cool if
the season is hot, and warmed in cold weather.   If the patient is
extremely violent, he is fastened on his bed, or his movements are con-
fined by the strait-waistcoat.   A severe diet is prescribed; cold drinks,
barley-water, or whey, or almond emulsion, or cherry-water, or pure
water, and other simple diluents are given.   The patient is left alone, the

attendants being at the door, and relatives and friends being excluded, "so as to reduce the patient to the smallest possible number of impressions and excitements." But this treatment is only adapted to the first period. (Vol. ii. p. 183.) After that it is desirable, and even necessary, that they should be allowed free exercise in the open air, and sufficient scope for their harmless extravagances, to the fullest extent, indeed, compatible with their safety and that of others. Restraint too long continued increases first the fury of the patient, and secondly, the chances of supervening paralysis. The stage of convalescence requires different measures; change of place, diet, and occupations.

Among the various methods of restraining the violent, particularly in the first stage of the malady, that mentioned by Sir William Ellis seems to possess several advantages.

"The most simple and least objectionable mode of confinement, is that of a pair of wide canvass sleeves, connected by a broad canvass shoulder-strap, so as to rest easily on the shoulders. They ought to come up well on the shoulders, and to extend about an inch beyond the ends of the fingers: the part covering the hand should be made of tolerably stiff leather, to prevent the hand grasping anything. They keep the arms hanging easily, and in a natural position, by the sides of the body. They are fastened at the back by two straps, one going from one sleeve a little above the elbow, across the loins to a similar position in the other sleeve; a second lower down, and by three similar straps in the front, the latter being secured by buckles, which, in large establishments, where there are many patients to be attended to by one keeper, ought to be locked. This mode of fastening has many advantages over the strait-waistcoat. In the first place, it is less heating, it produces no pressure upon the chest, and the arms, though secured from mischief, have so much freedom that the blood can circulate freely; as with these sleeves ligatures of every description are unnecessary. It is sometimes also requisite to secure the feet. For this purpose we find, that a couple of leathern straps well lined with wool, placed round the ankles, and secured to the bed by staples, is all that is necessary. In hospital practice cases will sometimes occur, where it may be necessary to secure the bedding in its place. This can be done by having a thick quilt fastened over the blankets, by three leathern straps, to the sides of the bed. It occasionally happens, that, unless this precaution is taken, the patient will toss all the clothes off the bed." (p. 164.)

In some cases we have seen that M. Esquirol mentions the fatal results of a refusal to take food. It is probably found, in the course of the extensive practice afforded by a large asylum, that this case presents more difficulties than would at first sight appear to attend it. Doubtless in many cases it is possible to introduce food into the mouth of the patient by closing the nostrils, in the manner so successfully adopted when the object is to force children to swallow unpalatable medicines; and the patient has so great an aversion to this process, that its repetition is not always necessary. This method seems at least as easy to practise as it can be to introduce the tube of the stomach-pump, in the manner recommended by Mr. Liddell, the translator of M. Esquirol's work on the Illusions of the Insane. As the repugnance to take food often depends on the supposition of the patients that it is intended to poison them; this delusion should, if possible, be combated, or the employment of force may produce hurtful agitation. As it not unfrequently is associated with the belief that instead of food they see pins, needles, or nauseous and disgusting substances presented to them, it is possible that some of the patients might be persuaded to take food when blindfolded. These cases often require forcible and yet judicious appeals to the feelings of the

patients. If all means fail, M. Esquirol advises the introduction of a tube through the nostrils: by this means he has saved many lives: in a case recited (Vol. i. p. 663,) it required to be used nearly five months.

These measures are chiefly useful in the melancholic patients and those who intend to destroy themselves by starvation. Maniacal patients require, M. Esquirol maintains, a different treatment. In these cases the repugnance to take food does not often continue many days. Sometimes it depends on temporary disorder of the stomach, and sometimes on a degree of delirium which takes away all sense of want: in the latter instances, a blister applied to each leg sometimes overcomes the refusal to eat.

Compelled, as we are, by the extent and number of the subjects comprehended in the general consideration of insanity, to abstain, at least for the present, from entering upon the important subject of moral treatment; we cannot refrain from recommending to the philanthropic consideration of all medical men the importance of houses of retreat and separation from lunatics of the *convalescent*. Without such a retreat, the cure must often be imperfect; many unhappy patients must suffer relapses, and many linger long in a state of uncertain recovery, to the great detriment of their worldly affairs, to the great misery of their families, and to the utter ruin of their own happiness. For patients of the comfortable classes, it is easy to provide every advantage which their condition requires; but for the poorer classes of society, whose affairs are often thrown into disorder by their unfortunate malady, it is far more difficult to provide a suitable convalescent abode. Sir William Ellis comments on this subject with equal good sense and humanity.

" Unfortunately, when a poor man, who has been for a long time an inmate of a lunatic asylum, where his daily wants have been supplied without any care or anxiety on his part, becomes sane, there is great difficulty in introducing him again into the world, and making him entirely dependent upon his own exertions, without at the same time producing a greater feeling of anxiety than his enfeebled brain and nervous system are capable of bearing. Many of the paupers, on their recovery, are entirely without resources; and they are driven of necessity into the workhouses, until they can obtain employment: this is more than they are able to bear. The benevolence of a gentleman of the name of Harrison, has done much to relieve cases of this kind, occurring in the West Riding of Yorkshire. Her Majesty Queen Adelaide is the patroness of a charity, which has for its object the supply to the immediate and most pressing necessities of the paupers, when discharged cured, from the asylum at Hanwell. Her Majesty contributed to it one hundred pounds, and other sums have already been subscribed, which have raised the amount of Queen Adelaide's Fund to the sum of nearly one thousand eight hundred pounds : this has been invested in the funds ; and the dividends have, in several instances, been the means of affording such timely assistance, as has, in all probability, prevented a relapse, and enabled the convalescent to maintain himself in comfort and respectability.

" But something further is still wanted. A comfortable place, where such of the patients as might be deemed proper objects, might, for a time, find food and shelter, and a home, until they could procure employment, would be an invaluable blessing to them; and if such an institution were established, even at the cost of parishes, it would in the end prove a saving. Many patients might be tried in such an establishment, and eventually restored to society, who are now compelled to remain in the asylum as lunatics, in consequence of their retaining some erroneous view, on some unimportant matter. Although this does not interfere with their capability of judging between right and wrong, or prevent them from performing their duty, it is an insurmountable bar to a medical superintendent signing a certificate of their sanity;

and without this, the visiting justices cannot order their discharge. I have no doubt, that in many instances, this erroneous impression would be effaced by a little mixing in the world, and in the ordinary business of life: indeed, I have known cases of this kind, where the friends have made the trial, and have procured the discharges of the patients, on their undertaking that they shall be no longer a burden to the parish. The greatest success has been the result: the complete change of scene, and the occupation of mind have entirely diverted the thoughts from the subject on which the erroneous impression remained; and as this ceased to be dwelt upon, the derangement gradually wore off, and the patient soon became perfectly sane." (p. 250.)

The portions of Dr. Prichard's work devoted to the Statistics of Insanity; to Unsoundness of Mind in relation to Jurisprudence; to Ecstatic Affections, including the phenomena of Somnambulism and Animal Magnetism; we can only mention the titles of. Much information is conveyed in each. A supplementary note of twenty-two pages contains the objections of this eminent physician to phrenology; on which we shall make no further comment than to observe, that, admitting the justness of Dr. P.'s remarks, we do not think them subversive of the phrenological doctrines. The work, taken altogether, is one of the most valuable books on insanity in our language, and one which every practitioner should make himself well acquainted with.

In like manner, there are large and valuable parts of M. Esquirol's volumes which we do not design to make the subject of present observation. Such are the section on Suicide, in the first volume; and the Statistical and Hygienic Memoirs, and the section on Mental Alienation in regard to Legal Medicine, which occupy more than half of the second. In these will be found, by those who carefully consult them, many valuable results of M. Esquirol's long observation; including many notices bearing upon practical points of much interest to those who have the care of lunatics. The Atlas of Plates contains twenty-five most expressive delineations of the several forms of insanity; particularly of melancholia, mania, and of cases passing or passed into dementia. The history of the individuals of whom the plates represent the likenesses are very interesting. That of Théroigne de Méricour, a highly-gifted woman, but celebrated for her irregularities and her political activity during the revolution, is a most impressive narrative of attractions and powers misapplied; and we can scarcely imagine anything more touching than the fixed and hopeless expression of the lady who is the subject of the third plate; who, having been in childhood the playmate of the unfortunate Duke d'Enghien at Chantilly, became, on his death, when she was but seventeen years of age, suddenly grey; sunk into profound melancholy, and remained almost wholly motionless and silent, her eyes for ever fixed on the window where she seemed to hear or see some one who engaged her attention; until death put an end to her incurable sorrow. These, doubtless, are but a few of the dreadful commentaries, afforded by the madhouse, on the crimes of those reputed sane.

Dr. Allen's Essay on the Classification of the Insane promises, by its title, to treat of a very important subject; but the classification of the subjects in the work itself is extremely defective. Both in this work and in Sir William Ellis's, but most in Dr. Allen's, the rambling style is such, and the plan so unintelligible, that the works have, properly speaking, neither beginning, middle, nor end. Dr. Allen accounts in part for the oddities of his production by saying "it was written, and even a great

part of it printed," as a continuation of his defence in the case of Allen v. Dutton, of which defence, we regret to say, we have no recollection. The preface promises that the said defence shall be bound up at the end of the essay, but we have looked for it in vain. Anything less consecutive and distinct than the preface we have not for a long time perused. To this succeeds what is called an Essay on Classification, extending to 110 pages; and to this is joined an appendix of 102 pages, with ten portraits of lunatics. The Essay begins with an account of Fair Mead House, Leopard's Hill Lodge, and Springfield, which constitute Dr. Allen's establishment at High Beach; all these localities, we fear, being not much known to readers in general, although we have little doubt that they furnish comfortable and well-conducted retreats for the insane. The arrangement of them is made with the very laudable design of classifying the patients, and particularly of subjecting the "recent, partial, slight, or convalescent cases" to particular attention. A remarkable case is introduced, abruptly enough, but professedly, as the table of contents says, to illustrate this subject; which case does indeed illustrate Dr. Allen's judicious management of a most violent and miserable fanatic, but has not the least bearing on the subject of classification. Every successive page convinces us the more of our incapacity to fathom the scope and tendency of Dr. Allen's meaning; and yet the detached observations, detailed in a kind of colloquial, reminiscent manner, are often sensible enough. The theory, however, dispersed here and there, is not quite so much approved of by us; we demur to "an alteration in the state of the nervous energy, *generating an acrid and morbific matter in the system*, and ultimately disease." (p. 22.) At page 55, we have a whole page of the preface, most unaccountably thrust into the middle of the essay, not transposed by any sleepiness of the printer, but repeated, as it would appear, by an oversight; and this tends to explain the strangeness both of Essay and Preface. The remainder of the essay consists of cases and observations, neither of which present any kind of novelty, although some of the cases are curious, and the practical observations, generally, are unexceptionable. The appendix contains thirty-one cases; some of which are instructive, and some highly amusing. We are bound to confess that the heads represented in the plates furnish very respectable phrenological testimony.

Of the benevolent views of Sir William Ellis, and of his great practical experience, his Treatise gives sufficient proof. The description which it contains of the large institution at Hanwell would alone render it valuable to medical readers. Its style, as we have already observed, is discursive, and we do not see much in the chapters on the nature, symptoms, and causes of insanity, with which previous works had left us unacquainted. We cannot but think, also, that Sir William Ellis lays too much claim to the merit of employing the lunatics; both because this system is not now to be considered a new one, and because when so many inmates of an asylum in which the cures are so few in number, and the incurable so numerous, are exhibited to the public as affording a spectacle of tranquil and useful occupation, a suspicion intrudes itself that some, at least, of these individuals who are classed among the incurable, might be restored to their ordinary modes of life; which result, and not the mere *house-keeping* of an asylum, much less its vain-glorious display, should surely

be the first object of the physician's ambition. At present, our lunatic asylums, or some of them at least, exhibit in their management a singular anomaly; for whilst the student, to whom a familiarity with their economy, and with the changeful and striking phenomena which their inmates present, would be extremely useful, is sturdily denied all entrance, as if his intrusion was a thing not to be endured, the public at large throng to these places on Sundays and holidays as to a fair. The careful, anxious, zealous student might sometimes be of service, and in many modes and on many occasions an auxiliary of the physician in chief; but the miscellaneous visitors must often be mischievous. Sir William Ellis, when speaking of admitting pupils to Hanwell, evidently feels that he is treading on unsure ground; and yet Hanwell is one of the *sights* of the vicinity of London. This publicity, if in one sense useful, inasmuch as it is a security to the public that all is well conducted there, is to us a far less noble recommendation than would be the circumstance of that large institution being at once the best conducted *hospital* for madness, and the spot on which a number of diligent students were ever imbibing the principles of rational treatment, to be by them diffused over the whole kingdom, or over the whole world. This would be an object worthy of the aspirations of the governors, and worthy of their philanthropy; it would act as a stimulus of the most salutary kind on the medical officers; and be the source, we really believe, of incalculable benefits to society. Then we might expect to receive, from time to time, from that establishment, with the weight of authority which a wide field of experience always gives, statistical details of the highest value, new and varied psychological and pathological observations, and clinical results by which this department of medicine would be raised from its present very unsatisfactory condition. We might then, in short, have something to point to, worthy of comparison with the writings of Esquirol and Foville, of Guislain and of Bayle.

Among the works of which the titles are prefixed to the present article, is one by Dr. Crowther, of Wakefield, a physician whose practical acquaintance with establishments for lunatics and great respectability entitle his remarks to much attention. He takes up his pen, at a time of life in which the favour or disfavour of men is of little consequence, as the advocate of the insane, with the intention of fearlessly pointing out the evils to which they are even yet, in his opinion, exposed. Although we do not apprehend, as Dr. Crowther appears to do, that any want of public vigilance could ever cause "the evil genius" which "so long tenanted Bethlem" to "domicile itself in Hanwell or Wakefield," we are much impressed with the force of many of his observations on the government of institutions of this kind. The difficulties in this particular of government are numerous; and it is more easy to point out some which arise from the dominion of the magistrates than to suggest safer and more efficient hands to which to intrust the power which must somewhere exist. We fear Dr. Crowther's remedy would be neither pleasant nor efficacious. The very name of a medical board is synonymous with discords, intrigues, mutual accusations, and every variety of strife that can render science ridiculous and impede the progress of truth. Magistrates may, and do, frequently err, for they are but mortals; but, where no political or reli-

gious prejudices interfere, we would rather trust to their plain integrity and sound good feeling than to the refinements of any association of men of a scientific description. It sometimes happens, no doubt, as Dr. Crowther observes, that magistrates make very unfit appointments, and that they are inclined to overlook delinquencies in the instruments they have unwisely selected; but a medical board would be equally fallible. The medical superintendent of a lunatic asylum may occasionally be thwarted, and have his patience considerably tried by an officious magistrate; but among several magistrates he cannot fail to find some men of sense who will support him in all that deserves support. Unhappy beyond all functionaries would he be who had to listen to the opinions, and be driven to and fro by the fancies of half a dozen men of his own profession; each " jealous of honour, sudden and quick in quarrel." In the one case, good measures would sometimes be delayed; in the other they would much more frequently be frustrated. The physician who acts with magistrates is surely pretty safe, if he exhibits ordinary capacity and judgment, from interference in his medical management of the insane; which, it is too often forgotten, is the most important point of his duty: but he who acted under a medical board could not prescribe bleeding or a purgative without fear of censure or impeachment. The magistrates may be omnipotent in the board-room, in the larder, the dairy, the kitchen, and the laundry; but they refrain from the doctor's shop. The medical board would be everywhere. Our opinions on these matters are formed after some experience of institutions governed by both classes of men, and we entertain a strong impression that no men are less fitted to govern others than those whose minds are narrowed by exclusive devotion to science. On this point we find ourselves completely at issue with Dr. Crowther; and his opinion would lead us much to question the soundness of our own, if we did not believe that he speaks rather from experience of one of the kinds of government of which we have spoken than of both. Perhaps the best government of all medical charities and institutions is that by a board or committee, of which a certain portion consists of medical men; but the portion ought not to preponderate.

On another point this venerable physician has, however, our entire assent. We mean, as respects the unlikelihood of the treatment of insane patients being well conducted, with a vigilant and unprejudiced eye towards the improvements gradually arising from advancing science, by any one whose mind has been directed to the management of mental diseases only. Dr. Crowther's observations on this subject are most judicious, and abundantly show the delusion of looking upon the cure of madness as a kind of craft, in which men wholly ignorant of medicine can become proficients. The third chapter of Dr. Crowther's little work, *On Quackery*, has our hearty approbation; and we concur with him in opinion that the diffusion of knowledge will alone efficiently protect regular medical men from " watering-place doctors," of whose proceedings he seems to have a very intimate knowledge. The fourth chapter relates to the prevalence of dysentery in asylums, which, especially at Hanwell, and in the West Riding and Kent asylums, Dr. Crowther ascribes to negligence. The sixth chapter relates to certain alleged falla-

cies in the returns of cures in the lunatic asylums; and especially at Hanwell; the patients who are discharged by the desire of their friends being, it is said, put down as cured. We can scarcely suppose this loose practice to exist at present. Dr. Crowther naturally enough ridicules Miss Martineau's account of the cures at Hanwell being, of the recent cases, "ninety in a hundred;" the truth being that the cures are fewer there, as we have already had occasion to mention, than in most of the asylums in the kingdom. We do not feel disposed to make particular allusion to certain other imputations of delusive reporting, from which, however, we should think Sir William Ellis would be anxious to clear himself. In consequence of reasons which actuate us in refraining from remarking on these points, we have passed over, in our notice of Sir W. Ellis's book, several observations, the tenor of which we by no means approve; and which give the work too much the air of an elaborate advertisement; partly of Hanwell, partly of another institution then in embryo; and partly of Sir William and Lady Ellis in all institutions wherever situated. Something of this kind we see also in Dr. Allen's book: and, although we entertain not the smallest doubt of the intelligence, kindness, and great respectability of Mrs. Allen and of Lady Ellis, the encomiastic leaning to the feminine head assuredly shows the ascendancy of the housekeeping department, of the propriety of which we are extremely sceptical.

The impropriety of allowing the medical superintendent of a large asylum to be the steward of the institution is very properly commented upon by Dr. Crowther. We have not the least doubt that in these cases, the housekeeping is the part of the direction best attended to. The asylum becomes a good boarding-house, a safe prison, a kind of show-house, but not an hospital, not a place of cure. That these circumstances have never been properly brought before the attention of those who appoint the chief officers of such establishments, and that they do not entertain just notions of the importance of the medical treatment of the insane, we have very good grounds for believing. We trust Dr. Crowther's remarks on the general constitution of asylums, and on the duties of the officers and servants, may attract general attention.

Dr. Ferrarese, of Naples, in the work which we have once or twice mentioned in our previous observations, appears to be a physician of much learning and of a sound judgment. We have read his work with much satisfaction; not so much on account of any particular originality in his observations, or novelty in his views, as because we have observed that he is well acquainted with the English writers, down to Haslam, with the French, inclusive of Esquirol and Georget, and with the best German authors on the subject of insanity. From these and other respectable authorities he has rather compiled a well-digested work than composed a treatise on disorders of the mind. But in every part of the work we perceive uniform indications of good sense, of enlightened views, and of benevolent and well considered plans of treatment. The work forms, indeed, an excellent epitome of theory and practice in the various forms of insanity.

The Tenth Report of the Connecticut Retreat comprehends a period of three years. About one hundred patients are accommodated in the insti-

tution.   The recoveries are stated as being equivalent to about thirty per cent. in the old cases, and about ninety in recent cases.

About one hundred patients are generally lodged in the Lunatic Asylum of St. Petersburgh.   Of those admitted in 1834, eighty-eight in number, six were received for the second time, and three for the third time.   The majority of the male patients were unmarried, and of the women, married.   The greater number were admitted between the thirtieth and thirty-fifth year.   Of those discharged cured and convalescent, the following were their periods of staying in the house:

In the first month	.	.	5		In the eighth month	.	.	4
— second	.	.	.	4	— eleventh	.	.	6
— third	.	.	.	5	In two years	.	.	.	2
— fourth	.	.	.	3	three	.	.	.	1
— fifth	.	.	.	3	six	.	.	.	.	1
— sixth	.	.	.	5				—
			—					14
			25					25
								—
					Total	.	.	.	39

In 1833, Dr. Greco, physician to the Royal Institution for the Insane at Palermo, published a pamphlet on the medical statistics of that institution from its reformation, about thirty years previously, in consequence of the humane efforts of the Baron Pisani.   In a second edition, Dr. Greco has completed his tables up to 1835.   On these we can only make a few passing observations.   It is remarkable that the number of women admitted is less than half that of the men.   In the St. Petersburgh report the number of men and women is nearly equal.   In ten years at the Connecticut Retreat the number of men and women admitted is exactly the same.   We have already mentioned Esquirol's researches on this point.   But a question presents itself here which materially affects the value of hospital statements in a statistical point of view.   The admissions of men and women, it is evident, may often depend on the accommodations and regulations of the hospital; and afford no correct evidence of the proportion of men and women affected with insanity in the neighbourhood.   In the Dundee asylum, the admissions (18th Report) are twelve women to thirty men; and there the cause is stated to be, as might be expected, a want of more accommodation for female patients.   Of 508 cases admitted into the Retreat at York, 245 were men and 263 women.

Idiocy seems rare in the fine climate of Sicily; giving support to the opinion of Esquirol that whilst insanity increases with the progress of what is called civilization, idiocy depends more on the influences of soil and climate.   This conclusion, however, we should by no means consider as established: the vices of civilization will probably be found to be as productive of idiocy in the offspring as any climatorial influences.   We derive salutary information from the prevalence of insanity in commercial communities; but it is not equally known, we think, how much the somewhat solitary, unexciting, indulgent life of the agriculturist disposes to mental disorder; nor has its singular frequency in the chief houses of some mountainous districts of our own island been the subject of much observation, although well known to tourists.   We suspect, also, that the

number of cases closely allied to imbecility of mind is very great among young persons composing the aristocracy of our quietest country-towns, and in the monotonous country-houses of England; these cases escaping general observation, because such minds are called upon for little or no exertion; but the medical observer cannot overlook them.   Talents little cultivated and little exercised for several generations, and a mode of life almost entirely animal, are circumstances which lead to the production of a robust fine-looking progeny, often with large round heads, but with a brain of the smallest degree of activity.   Even the phrenologists have failed to notice these curious particulars, which our small provincial communities, in parts of the country unenlivened by extensive trade and railroads, afford, we think, some opportunities for observing.

Dr. Greco introduces a table of *occupations*, which we regard as very interesting.

MEN.		WOMEN.	
Merchants	14	Servants	25
Military men	27	Peasants	20
Naval men	2	Tradespeople	36
Priests and monks	27	Nobility	9
Students	9	Private gentlewomen	39
Medical men	4	Nuns	6
Lawyers	16	Poor people	17
Nobles	6		
Squires living upon their estates	20	Total	152
Placemen	23		
Industrious civilians	30		
Peasants	44		
Servants	3		
Artisans	55		
Beggars	3		
Public salesmen	13		
Prisoners	10		
Total	306		

In this table we are anxious to point out to the reader the number of cases of insanity among the poorer classes of society; because we do not think the influence of poverty and wretchedness has been sufficiently considered in relation to the imperfection and disturbance of reason. We see that, among the male cases, the peasants and artisans are the most numerous; and if to these we add the servants, the beggars, and the prisoners, we have more than one third of the male lunatics in the humbler ranks of society.   Among the women, leaving out the tradespeople, the number of peasants, servants, and poor people is nearly one half of the whole.   Other reflections, on which we need not dwell, will arise in every reader's mind on looking at the table; and their relation to the causes, and consequently to the prevention of insanity, is not unimportant.   We should observe, that the Sicilian peasant is not only exposed to poverty, but to the burning rays of the sun, and to the vapours of charcoal and metals.   The moral causes of insanity are many in Dr. Greco's tables.   One half of the cases of this kind are ascribed to domestic sorrow, destitution, reverses of fortune, ambition, the loss of parents, and persecution.   In the Aberdeen Report (1838), of forty-three patients admitted, the causes of the malady were, intemperance in

the use of spirits in eight, domestic disquietude in seven, pecuniary difficulties in two; and, in twenty-two out of the forty-three cases, there was also hereditary predisposition.   In the Massachusetts Hospital, the proportion of mechanics is considerable; and the reason assigned is their sedentary mode of life.   Mercantile speculations are everywhere an acknowledged cause of great frequency; and it is observed by Dr. Woodward that very few of the steady, industrious, and temperate members of the community become insane.   The more we consider these matters, the more clearly we see that the physician is in a great measure the substitute of human reason and of political wisdom; and that, as these are more and more cultivated and improved, he will be less and less required to interfere.

Every Report contains gratifying evidence of the curability of recent cases of insanity; and, making every reasonable deduction from these statements, sufficient encouragement is held out by them to prompt treatment, of which the neglect is so often seen to lead to the chronic and unmanageable forms of mental disorder.   The Report of the New-York Hospital gives 98 per cent. as the number of recoveries in the recent cases.   In this, and indeed in the various Reports which we have seen from other countries, we observe, with much satisfaction, the general diffusion of rational views of moral and physical treatment.   Nowhere do we see this more distinctly than in the Scotch Reports, in which the characteristic energy of our northern neighbours is very advantageously exhibited.   Accurate numerical statements are accompanied by reflections full of good sense, and entitled to be called philosophical.   Everywhere, we trust, (at least in the more advanced countries of Europe,) may it now be said, as in the Dundee Report for 1837-38;

" Gentleness, candour, exercise, and useful labour have now succeeded to harshness, deception, inactivity, and rest.   The hands that were formerly bound in chains are now handling the spade and the mattock; the mind that was once bewildered by the arts of false misrepresentation, is now soothed by the voice of truth; the solitude and rest which once benumbed the faculties, and rendered torpid all our energies, are now exchanged for the employment of social life; and the heart once sunk in the gloom of religious melancholy, is now gladdened by the sound of praise and the tidings of salvation."

The concluding words of this quotation contain an allusion to a subject of great seriousness and importance, the administering of religious consolation to lunatics; than which nothing requires that zeal should be more carefully tempered by judgment.

The healthiness of the Dundee Asylum has been remarkable: its inmates wholly escaped the cholera, which was so fatal in many lunatic establishments.   The average of deaths for six years past has not been more than six per cent.   Upon the whole, we have been extremely interested with the reports of this admirably conducted asylum; for such we cannot doubt its being from the very nature of the reports, in which, without ostentation or any apparently interested or *business* motive, the gentle, considerate, and scientific character of the management is very conspicuous.

Among the pamphlets before us is one of the Reports of the Retreat at York, an institution which we never see mentioned by any writer on these subjects without expressions of admiration and respect.   This report

is for 1836, but comprehends statistical statements founded on the experience of forty years in that establishment. Most of these have already been alluded to.

It has been with much gratification that we have gone through the Reports and other documents relating to the State Lunatic Hospital at Worcester, Massachusetts; from which might be selected striking illustrations of the former dreadful condition of lunatics, and of the advantages derived from a change of treatment. The American physicians keep pace with the most enlightened practitioners of Europe in their treatment of insanity, and, whilst alive to the importance of moral management, lay proper stress on the benefit to be in many cases derived from the timely and judicious application of medicinal means. In one of the Reports it is stated that of the cases of insanity from intemperance, about 50 per cent. recover; of those from domestic afflictions, about 53 per cent.; of those from ill health, about 72; and of those from religious causes, about 50. Of the cases ascribed to manustupratio, which is frequently mentioned as a cause by the American writers, only about 7 per cent. are said to recover their reason. Some frightful cases of homicidal insanity, intended to illustrate moral insanity, are inserted in an appendix. It would be injustice to Dr. Woodward not to mention that his indefatigable attentions, philanthropy, and intelligence, in carrying into full effect all means of cure in this hospital, are spoken of by the directors as "above all praise, and beyond all price."

In the Report of the Hanwell Asylum (January, 1838,) we see little on which we are disposed to make any observations. Compared with most of the reports of other institutions, it is meager, and contains little information. Sir William Ellis, however, states that the per centage of deaths at the Middlesex Asylum, from its first opening to that time, is "much smaller than in any other large institution similarly circumstanced," with which he is acquainted; and he illustrates this by a table of the number of patients and deaths in the Middlesex, Wakefield, and Lancaster Asylums; the only three large asylums in England, he says, in which *only* paupers are received, and "where the patients must remain until they die or are cured, or cease to require parochial assistance." By this table, whilst the annual per centage of deaths for six years past has been, at Lancaster 24.29, and at Wakefield 17.87, it is shown to have been only 12.56 at Hanwell. This is chiefly ascribed by Sir W. Ellis to the good situation of the Hanwell Asylum; but as, of nearly 600 patients remaining in the asylum at the time of making the report, Sir W. Ellis pronounces all to be incurable, at least in all probability, *except thirteen*, the rest must of course die off, and swell the annual mortality in future. Of thirty-seven men admitted last year, fourteen were discharged cured; and, of twenty-seven women admitted, the cures were thirteen. The chronic cases, or those of longer date than two years, were, of the men, seventeen, and of the women, eighteen. Of the rest, six men and two women had been previously insane. A great number of the patients (194 men and 260 women) are constantly employed. We cannot help again expressing something like a belief, or certainly a hope, that some of these patients, so docile, so industrious, so orderly, may yet be restored to perfect mental health by various, well-devised, and timely applied medicinal and moral means.

The brief notices we have already given of Mr. Farr's Statistics are sufficient to show the variety and importance of the particulars included in his pamphlet. On one subject, which greatly requires revision, the *public management of lunatics*, we cannot at present enter. The present system is certainly neither convenient nor effective. In Mr. Farr's words,

" At present there are inspectors for Chancery lunatics, commissioners for licensed houses, visiting justices for county asylums: Bethlem, where the greatest abuses have existed, is expressly exempted from regular inspection; the reports of the best asylums, those supported by subscription, are published in no regular form; the facts collected by the central commissioners, and the inspectors of Chancery lunatics, have never been published. A more delusive, inefficient, unsatisfactory system of inspection than now obtains cannot be imagined." (p. 37.)

The remedies proposed by Mr. Farr are, that the medical inspection should be vested in one body, and should extend to all establishments irrespectively; and that every lunatic in the country should be included in the annual tabular reports. We believe many existing evils would be put an end to by this plan, the details of which will be found in Mr. Farr's pages; and there can be no doubt that it would be the means of obtaining statistical results that might be relied upon.

In the past history of lunatic asylums, revolting as some of its early passages are, the progressive improvement of those melancholy receptacles for the worst forms of human wretchedness affords a foundation for the most confident hope that whatever evils yet exist in their government will gradually be remedied. To some large institutions we understand that well-educated medical men have recently been appointed as superintendents; men who will not consider themselves as mere bailiffs or stewards, or keepers, or show-men of lunatics; and who will have little opportunity of making a public institution merely subsidiary to avaricious private views; but will remember what is expected from them, and acquit themselves of important duties to the public, as well as to the establishments to which they belong.

The preceding observations suffice, we think, to convince every medical reader that there are yet many unsettled questions to which men of scientific education might usefully apply themselves, in our large lunatic institutions. A fuller and closer investigation of the predisposing and exciting causes of insanity,—a careful investigation and trial of different modes of treatment,—and some questions in medical jurisprudence, may be particularly mentioned, as soliciting the attention of those who are enabled by their position to devote all their time to this great branch of practice; and not many years will elapse, we venture to prophesy, before valuable contributions will be made in our own country towards a more satisfactory pathology and practice in all diseases of the mind.

ART. II.

1. *Traité théorique et pratique de la Derivation contre les Affections les plus communes en général, telle que la Plethore, l'Inflammation, l'Hemorrhagie, &c. &c.* Par L. F. GONDRET, Docteur en Médecine de la Faculté de Paris, &c.—*Paris*, 1837. 8vo. pp. 328.

Theoretical and Practical Treatise on Derivation as a Remedy for some of the most common Affections, such as Plethora, Inflammation, Hemorrhage, &c. By L. F. GONDRET, Doctor of Medicine of the Faculty of Paris, &c.—*Paris*, 1837. 8vo. pp. 328.

2. *Counter-Irritation, its Principles and Practice, illustrated by one hundred Cases of the most painful and important Diseases effectually cured by external Applications.* By A. B. GRANVILLE, M.D. F.R.S., &c.—*London*, 1838. 8vo. pp. 360.

3. *Counter-action viewed as a Means of Cure, with Remarks on the Uses of the Issue.* By JOHN EPPS, M.D. &c.—*London*, 1832. 8vo. pp. 69.

IT has been remarked by M. Louis "that we do not know the therapeutic value of blisters, and that it ought to be studied with the assistance of numerous and well-established facts, absolutely as if we knew nothing regarding them."* Till a recent period this observation might, in this country at least, be extended with a considerable degree of truth beyond the one form of counter-irritation to which it was applied; for, although the expression was in frequent use, though the practice was one most familiar to surgeons and physicians, and various means of accomplishing it constituted important parts of the treatment adopted in the majority of cases with which medical works abounded, we could scarcely be considered as possessing in our language a treatise specially dedicated to this important branch of therapeutics. From 1754, the period of the publication of Dr. Giles Watt's work on Derivation and Revulsion, a work now become antiquated, to 1822, when Dr. Jenner published his letter to Dr. Parry on Artificial Eruptions, no British book on this subject of any mark or likelihood appeared, whilst from the presses of Germany, Italy, and especially of France, the subject received that ample attention which its importance merited. As a consequence, apparently, of this superior attention, we have remarked that continental practitioners employ a greater variety of remedies of this class, and repose more confidence on them, than those of this country.

These observations are calculated to show that the British works at the head of this article are by no means superfluities in our literature, if they are really fitted to supply the deficiency which we have seen to exist. Before, however, proceeding to examine into this point, it appears incumbent upon us to give such a general view of the subject as may place the reader himself in a position to judge of the respective merits of these works, and likewise to clear it from certain sources of confusion

* Recherches sur les Effets de la Saignée en quelques Maladies Inflammatoires. Par P. Ch. A. Louis.

and error, which a careful perusal of them, and, in the deficiency of our own literature, of various foreign publications, has shown to exist.

I. The terms employed, it will be observed, in this country and on the continent, to express the action produced by these remedies, and the remedies themselves, are different. In England we now speak of counter-irritation and counter-irritants; Dr. Epps's expression is counter-action: abroad, the terms are derivation and derivatives, and revulsion and revulsives, which same terms were anciently used in our own country. It is a reasonable question whether terms so dissimilar do in fact signify the same thing; and, whether they do so or not, what they do signify. That the word *derivation*, and its correlative *derivative*, have a sufficiently wide sense, is evident from passages of the work of M. Gondret; for he says that "normal derivation consists in the regular course of the different evacuations proper to the human body, cutaneous and pulmonary exhalations, urine, and fæces. Therapeutic derivation has for its object to reestablish normal derivation, when it is retarded or suspended." (p. 13.) Dr. Epps occasionally employs his word *counter-action* in a sense equally extensive; for he remarks, after describing the cold and hot stages of ague, "All pass away on the occurrence of the perspiration; and what is this perspiration but a counter-action set up upon the skin, and thus relieving the internal disease?" The same writer remarks that, "in cases of abdominal dropsy, violent purging is induced to excite counter-action, in order to remove the dropsy, and at the same time to overcome the action connected with the effusion of a dropsical fluid. Indeed, in many other diseased states, counter-action is frequently excited by the internal administration of medicines." (p. 56.) Definitions, or rather descriptions, like these, give to the words employed in the titles of these works a meaning co-extensive with the whole method of cure adopted in hyperemia and inflammation, whether applied to the surface or administered internally; and an essay on derivation would be a treatise of therapeutics. When we examine, however, the application of the terms these writers respectively use to the means they actually employ, and to the direct effect produced by these means, we find that counter-action, counter-irritation, and derivation, counter-irritants and derivatives, have the same meaning; the former words describing a degree of irritation of the surface, with an afflux of blood to it, and in most cases an increased secretion from it; the latter, the means by which such effects are produced. All the words are hypothetical, (that employed by Dr. Epps excepted;) derivation, and its correlative, implying that the afflux of fluid to the part irritated is the means of cure; counter-irritation, that the irritation is so. This is, however, immaterial; as is likewise the etymological sense of the words, (a point on which Dr. Granville lays needless stress,) provided it is agreed to limit them to express the fact that, from the application of substances capable of producing such immediate effects on the surface, diseases seated elsewhere are relieved or cured; a fact which experience only can teach us, though an analogy which will be subsequently adverted to may have suggested their trial. Revulsion and revulsive have, at least since the days of Wiseman, been understood to differ from derivation and derivative only in degree. Leaving the humoral pathology involved in all the words out of the question, the former express that the remedies applied, though of the

same nature, are more violent, and are applied at a greater distance from the part morbidly affected than when the latter terms are employed.*

It will thus be perceived that there was a source of confusion arising from the employment of different words to express the same thing; this difference arising from the medical doctrine reigning at the time the terms were introduced, and their adaptation to such doctrines: the contemporaries of a humoral pathology ascribing the cure to an afflux of humours to the part, the solidists to its irritation. Dr. Granville has dedicated eight pages of very small scholarship to a further confounding of the original confusion. Besides showing a singular want of skill in discussing what he considers the three modes of action displayed by these remedies prior to his *discoveries*, he introduces a fourth element of confusion in the following very luminous terms:

" One of the external applications to which I allude I have found to produce four very distinct and well-marked actions; or, if the reader pleases, four consecutive degrees or varieties of the same action. Three of these are identical with the three modes of action already described, (counter-irritation, revulsion, derivation;) the other, or the principal mode, judging only by its manifestation when employed, and by its rapid success, is not comparable to any of them. It stands alone: I believe it never to have been obtained before by the ordinary means of external medication; and its influence on the nervous system admits of only two plausible solutions: that of a *shock*, (dissimilar, however, in every respect to that of electricity or electro-magnetism,) and that of a rapid absorption of the substance employed. It is not possible to explain what takes place under the almost magic influence of the application alluded to, in all cases of acute pain of the nerves, of spasm, of nervous head-ach, and of very intense tooth-ach, unless we adopt one or the other of the preceding solutions." (p. 7.)

II. Those natural analogies by which counter-irritation was probably suggested in the infancy of our art, and from which its adoption receives illustration and authority in the present day, are of too much practical importance to be passed without notice. All the writers before us mention them. Dr. Granville says, " If, in a case of gout affecting the stomach, we succeed in relieving that important organ by means of counter-irritants applied to the instep or the toes, we do so because we have often witnessed how nature quickly expels a dangerous attack of gout from the stomach by the appearance of a well-defined, red, tense, and exquisitely painful swelling of the foot." Dr. Epps treats this branch of the subject at considerable length; and we consider his first chapter as a valuable record of examples drawn from sources ancient and modern, and from his own experience, of the danger accruing to patients from the suppression of chronic eruptions and ulcers; though we must be allowed to remark that, by suitable constitutional treatment, medicinal and dietetic, the patients might have been relieved from a loathsome local affection, without danger to life, much more frequently than Dr. Epps seems to imagine; and we are somewhat surprised that an experienced physician should have apparently counselled rather a slothful acquiescence in disease than an adoption of measures for the restora-

* Derivation differs from revulsion only in the measure of the distance and the force of the medicines used: if we draw it to some very remote, or it may be contrary, part, we call that revulsion; if only to some neighbouring place, and by gentle means, we call it derivation.—*Wiseman's Surgery.*

tion of *actual* health. These eruptions, from the crusta lactea of infancy to the acnes and impetigines of adult or even advanced age, are very properly regarded as the safety-valves of the constitution; but neither reasoning nor experience counsels us against dealing with them through the constitutional errors on which they are dependent. Would not the correction of faults of regimen and the prudent employment of remedies for plethora, conjointly with the local treatment for the ulcer existing in the following case, have produced a result much more credit-able to our art, and beneficial to the patient, than that which actually occurred? We give the case in Dr. Epps's own words, which most people will regard as more distinguished for point than reverence.

"I remember a dean who made 'a god of his belly,' and who every morning was visited by his medical practitioner on account of an ulcerated leg, with which he was, he said, 'afflicted;' the medical practitioner thought 'blessed.' Becoming tired of the constant torment of this ulcerated extremity, and being at the same time, per-haps, unwilling to pay the constantly repeated fees, the luxurious dean went to a surgeon of considerable eminence for the cure of diseased legs. The leg was healed, and the chapter was left vacant; for the worthy member who had filled a place in it so many years, with so little benefit to the public and with so much ease to himself, was absent: in other words, he died; and apoplexy was death's messenger.

"The dean's medical adviser had recommended him not to have the leg healed; for, as the dean would eat, and, as the poet says, 'would sleep,' it was the conviction of the practitioner that some drain must exist in the system.

"The dean, however, was not satisfied. The leg-doctor was not of the most accu-rate or of the most extensive knowledge: he did not see the principle of the treatment. The patient came wishing to have his leg healed: the object was effected. The leg-doctor was praised; but the dean, as was before stated, soon ceased to give his recom-mendatory statements of the man's skill." (p. 6.)

In the same part of the work we find recorded the important fact that in families, some of whom labour under insanity, and others are exempt from this malady till the day of their death, the latter will often be found to have had through life scrofulous ulceration in the leg, neck, or some other part of the body. Indeed, the analogies drawn from natural disease in favour of counter-irritation are in general very interesting; but some we think strained beyond the limits which strict reasoning justifies. In this category those appear to us which are drawn from the exanthe-mata; the author regarding the eruption of small-pox as a counter-irritation established by nature for the relief of epigastric pain, vomiting, and fever; whilst that of measles is similarly destined to remove the catarrhal and febrile symptoms of the complaint. This view appears to be rather assumed than proved. A considerable mitigation of the inter-nal distress in these two diseases generally accompanies the eruption; but it occurs on its first appearance, before the inflammation of the skin exists to an extent to act as a counter-irritant. Indeed, their whole progress wears more the aspect of the disease fulfilling its destined periods, than that one of its parts is the remedy of the other. If we attempt to extend the analogy to scarlatina, it fails; for here great hyperemia of the skin, so far from relieving an ardent fever and great internal oppression, is associated with them throughout the disease. The deadly nature of certain cases of the exanthemata, in which the eruption fails to occur, cannot be advanced with any confidence to confirm the views of the author; for it is at least as reasonable to attribute this

failure in the ordinary course of the disease to its inherent deadliness, as to suppose, with Dr. Epps, the causation to take place in the reverse order.

III. Besides the suggestion and confirmation of the practice now under consideration, derived from these natural analogies, accidents or surgical operations not performed for the purpose of exciting counter-irritation, may, in the course of their cure, produce an effect on some previously existing disease, well fitted to illustrate the therapeutic value of intentional counter-irritation, and even the relative utility of different modes of effecting it. Dr. Epps's pamphlet is rich in cases belonging to both these classes. The following example of accidental counter-irritation appears very important and instructive:—Captain Innis was tapped, and nineteen pints of water were drawn off. The abdomen began again to fill, and several pints of water had reaccumulated. Some boiling water was spilled on the captain's leg. Inflammation came on, an ulcer was formed, and spread. In proportion as it spread, the accumulation of water in the abdomen diminished, and at length the officer was perfectly cured of his dropsical affection.

We think that some exception might be taken to a proportion of the author's cases, which fall under one or the other of these heads; for, being rather culled from various writers than derived from his own experience, many of them are deficient in the fulness of detail required for a just estimate of the power of the (accidental or unintentional) remedy. This objection applies to the following case from Richter. This eminent surgeon had extirpated both mammæ for supposed scirrhus. On the fourth day after the operation, an indurated gland was discovered in the arm-pit, suppuration of the wounds appeared on the fifth, and during this, which lasted for five weeks till the breasts were healed, the tumour vanished. We think that a full detail of the case would have shown, either that the axillary swelling had been generated by the irritation of the incision, or that, at all events, it was of the nature of common inflammation, and not carcinomatous; for we are convinced that it does not consist with the experience of any surgeon that tumours of a malignant nature are dispersed by the suppuration induced by the removal of a portion of the diseased structure. Again, Dr. Epps informs us that Brambilla saw phthisis cured by amputation of a leg. We have seen many cases, at least very much resembling phthisis, cured by this means: we did not, however, ascribe this to the counter-action of the operation, but to the patients being relieved from the irritation and drain to their constitution arising from a diseased joint.

IV. We should object to all of the works before us, that they are less systematic treatises on counter-irritation than pleadings in favour of some specific mode of effecting it; but it is only just to remark that, whilst the unpretending pamphlet of Dr. Epps is the least exceptionable on this score, the more voluminous and imposing tome of Dr. Granville is the most so; and to the last-named individual belongs the additional distinction of being the sole advocate of a secret *nostrum*, and this nostrum his own. We should have been gratified to find such questions as the following discussed, and the experience of the writers applied to their solution:—In acute inflammatory disease, how far will counter-irritation supersede bloodletting and other exhausting measures? Should, in such

diseases, epispastics be at once associated with the means employed, or should the latter in all cases precede them? In phlogosis of a more chronic character, should depletion enter into the plan of treatment, or may the disease be trusted to counter-irritation alone; and, if the former is to be employed, ought it to precede the latter? These are practical questions, and such as a good deal of observation of what is done and omitted by various medical men in this country, convinces us are not so far settled as to induce an uniformity of practice; and an examination of them, if not a final settlement, might have been reasonably expected in works of the character now under consideration. Another point, too, of much importance is left untouched by these writers, with the exception of Dr. Epps. When irritants are applied to the surface, certain manifest effects are produced there; such as rubefaction, vesication, and cauterization, and, it may be, ulceration with secretion of pus. Besides these effects on circulation and secretion, there is a sense of heat and smarting, arising from an impression on the nerves of the part. According to the choice of the practitioner with regard to the means he employs, or the duration of the application of the same means, certain only of these effects may be produced, others avoided. It is an important question how far one only or more of these forms of effects are essentially connected with the curative influence on disease; and, provided that more than one is so, which is the most influential? The decision of this question, it is obvious, should precede the other, "What counter-irritant is the best?" and would suffice to settle it; yet, whilst the latter is the main theme of three volumes, the former is mentioned only by Dr. Epps.

We attach the more importance to this writer's opinion on this point, because it is, though not identical, considerably accordant with that of one of the master-spirits of our art, Dr. Jenner. The former gentleman, after eulogizing the efficacy of issues, thus expresses himself:

"It may be asked, *on what is the counter-action* connected with the issue dependent? Upon the formation of the pus, and the *state* of the surrounding parts connected with its formation. The formation of pus necessarily implies a new action in the vessels of the part. The vessels surrounding the part where this action is going on are brought into a dilated condition. They are thus predisposed to be affected by any cause producing an irregularity in the distribution of the blood; and thus, the diseased action being induced in them, it is prevented taking place in any internal part where a debilitated state of the parts may exist." (p. 64.)

Dr. Epps meets the reasoning deduced from the small quantity of matter formed by the following facts:

"A. B., a young gentleman of high moral character, aged twenty-one, had been troubled for several years by a small transparent drop of viscid lymph being continually at the termination of one of the passages of the body. It was no trouble to him; but when, from any cause, it was dried up or was not formed, A. B. was seized with the most intolerable headaches, not relieved until the discharge was produced." (p. 64.)

Dr. Jenner, in his letter to Dr. Parry on Artificial Eruptions, insists, in common with Dr. Epps, on the necessity for the production of a fluid. He says that he found, in the case of artificial eruptions produced by the ointment of emetic tartar, "that the relief afforded was almost invariably timed, not simply by the first blush of inflammation, but by the appearance of vesicles which contain a *secreted fluid;* and that these seem

absolutely necessary for the production of constitutional influence."
Again he remarks, (and it is not unpleasing to trace the influence of his
researches on cow-pock in his reasoning,) that "a vesicular eruption, in
general, seems the favorite scheme of nature for limiting the duration of
peculiar morbid actions." "Every pimple with a vesiculated head has an
errand to perform for the benefit of the constitution." Among the sub-
jects connected with counter-irritation and artificial eruptions, suggested
by this distinguished individual for further elucidation, is the following:
"How far the peculiar constitutional influence results from the *eruptive*
form of the local irritation excited, and is analogous with the laws of
secretion." It is evident that, though one of these writers suggests the
employment of the ulcerative, the other that of the vesicular or pustular
form of irritation, both regard the secretion induced as the efficient in-
strument of cure.

V. With the exception of Dr. Epps, the writers before us display little
of the analytical spirit in which we should have been glad to see the
whole subject treated: they furnish, however, much information as to the
influence of certain counter-irritants on different diseases; and the sub-
stance of this information we shall endeavour to impart to the reader in
as systematic a form as we can invest it with.

I. *Heat.* Heat is an agent which receives much attention from two
of the writers; and, as its powers are less generally known and appreci-
ated in this country than abroad, we are glad of an opportunity of excit-
ing attention to it. The illustration, by Dr. Epps, of intentional
counter-irritation derived from the accidental application of heat, has
been already mentioned. The same writer gives us some valuable infor-
mation regarding the intentional employment of the same agent. The
following examples of recovery from poisoning are very valuable. A
gentleman took ten grains of opium, and in about an hour after was
found by his medical attendant in an apoplectic state. The stomach-
pump was then unknown, and, the stomach being overpowered by the
poison, tartar emetic and white vitriol failed to produce vomiting. Hot
water was applied to the thighs, legs, and arms alternately for twenty-
four hours, when the patient recovered; the inflammation in the scalded
parts being afterwards so severe as not to allow the patient to touch
them with his clothes. It is probable that the practice which here proved
so successful might be extended to other cases of apoplexy besides those
from poisoning. In the other case, in which a blacksmith had taken "a
quantity of prussic acid," boiling water was poured over the legs without
any effect. The legs were then scarified in numerous places, and an-
other quantity of boiling water was poured over the limbs thus scarified.
The first sign of restoration was a slight spasmodic contraction of the
muscles, and in a short time spasmodic action took place in many parts
of the body. The pulsation of the heart and the respiratory motions were
restored, but weakly and irregularly. In a quarter of an hour the legs
began to swell, and there was general excitement, but no pain. There
was progressive improvement, which is minutely described; but it is
sufficient for us to say, that on the evening of the second day he became
quite sensible, and was ultimately restored to perfect health. We think
this case creditable to the practitioner. Cold affusion might possibly
have produced the same result more speedily, and certainly without

subsequent suffering; but we are not willing to intimate that any pro-
ceeding would have been preferable to one which produced recovery
under such deplorable circumstances as those described.

Fomentations are too generally prized, and the correct mode of apply-
ing them is too familiar, to render it needful to transcribe Dr. Epps's
testimony in their favour, or his minute description of the best mode of
employing them; but the following statement transcends any idea we had
formed of their efficacy, and we regret that the author does not confirm
it from his personal experience.

" Dr. Wigton, of Edinburgh, states [where?] that by fomentations he always suc-
ceeds in curing *puerperal inflammation*, if called before the disease has proceeded
to the last stage. The pain, let it be remembered, is often increased by the two or
three first applications, but afterwards the pain diminishes. The rule of Dr. Wigton
is, *never to desist till the pain is relieved*, yea, *removed*. Perseverance is always
necessary; no fixed time for the continuance of the fomentation can be named: *till
the pain is relieved* ought to be the criterion." (*Epps,* p. 27-8.)

M. Gondret dedicates a chapter of considerable length to the conside-
ration of the same agent, heat. It opens with the well-known aphorism
of Hippocrates: " Diseases which medicine does not cure, steel cures;
those which steel does not cure, fire cures; and those which fire does not
cure must be regarded as incurable." Supported by this high authority,
M. Gondret extended his historical researches from the 80th Olympiad
to the present era, and found that all distinguished physicians had given
their testimony in favour of this remedy. He proceeded to its practical
application, and after finding that phthisis, in a certain stage, yielded to
its power, he assailed with it palsy, apoplexy, epilepsy, rickets, cancer-
ous tumours, gout, neuralgia, visceral enlargements, cataract, and
amaurosis. His experience in these diseases has led him to regard fire
as the tonic " *par excellence*," and, as it reestablishes at the same time
the physical and moral faculties, the regulator of the vital principle.

These flourishes suggested no pleasing presentiments of our further
progress through the work; but we find the facts detailed of greater
value than we anticipated. Those relative to sincipital combustion,—in
other words, burning the crown of the head with a metal heated to a
white heat,—in certain affections of the sensorial and motor systems,
appear to us very interesting and important. A brief abstract of one or
two cases will, we think, lead the reader to concur with us in opinion.—
A girl, sixteen years of age, subject from her third year to convulsive
movements of the muscles of the neck and momentary loss of conscious-
ness, became, when twelve years old, decidedly epileptic, so that she
had monthly from fifteen to twenty fits of this disease. Her intellect
was obscured, her appearance idiotic, her movements were restrained
and slow, and her step was tottering. Bleeding and antispasmodics
were employed in vain. On the 27th March, 1816, sincipital combus-
tion was performed, and there was no fit till the 16th April. On the
8th of May, a thin scale of bone exfoliated from the cauterized part.
On the 10th of this month, the cautery was repeated above the occipital
protuberance. From the 27th of March to the 6th of October, a period
which, prior to the cauterization, would have furnished more than a
hundred fits, there were but three, and those very slight ones; whilst
the intellectual faculties were much improved, and the movements became

free and lively. Seven months after the first use of the cautery, this patient married, and a year after bore a healthy child.—In the following case of double cataract, the effect of the same remedy would appear to have been very beneficial. A sergeant had inflammation of the right eye, with cephalalgia, and was sent to consult M. Gondret. On the 8th of December, 1824, his state is thus described: Right eye, vision null, conjunctiva inflamed, with a degree of puffing resembling chemosis; no pain; pupil motionless and contracted; cataract very well marked: left eye, sight constantly interrupted by a thick mist, and at intervals entirely confused; evident opacity of the lens, which is of a grey-white colour. On the 9th of December he was cupped in the nape, and the crown of the head was cauterized. Passing over other reports, we reach that of August, 1825, which is as follows: The cataract of the left eye is almost invisible, and the vision good; in the right eye, the conjunctiva is cured, the pupil is still contracted, but possesses some motion; the lens is very visible, though less opaque and less dense than it was. The sight of this eye, which formerly was null, is sufficiently reestablished to enable the patient to distinguish the features of any one, especially when he looks in the direction of the small angle of the eye, where the crystalline has the least opacity. In September, the vision of the left eye was well preserved, whilst that of the right was improving.

This memoir of the author on the utility of fire in medicine is the subject of a report by the commissioners, MM. Portal, Thénard, and Percy, deputed by the Royal Academy of Sciences to enquire into its merits. This report is in the highest degree favorable to the disinterestedness, modesty, and integrity (*loyauté*) of the author, and to the efficacy of the means he recommends. They declare that the application of fire in general, and in particular the burning of the head, are exempt from danger, when employed by one possessing the requisite pyrotechnic skill; and that they themselves had witnessed, on five important (*majeures*) occasions, where physicians, wearied with the obstinacy of the disease, had abandoned the patients for ever, sincipital cauterization, performed by M. Gondret, produce changes the most astonishing and the most salutary.

It has long been our opinion that, in affections of the brain and nervous system, counter-irritation of the scalp is less frequently and decidedly employed in this country than it deserves to be. As is the case with many peculiarities of British practice, this chariness can be traced, we believe, to the influence of one successful writer. Dr. Cheyne, in his work on Hydrocephalus acutus, published nearly a quarter of a century ago, reprehended the practice of blistering the scalp in this and other cerebral affections; and his counsel has not only been adopted, but extended beyond the circumstances to which he applied it. We find even the present writer, M. Gondret, in a tone singularly inconsistent with the general tenor of his work, decrying *leeches* and blisters to the scalp in acute affections of the head, and asking "who has not seen cerebral and ocular inflammation augmented under the influence of leeches, applied alternately on the temples and round the eyes and ears?" With the single exception of the application of these animals so near the eye that the irritation caused by their bites extends to the inflamed organ, we have not only not seen that happen which is implied in

M. Gondret's query : but we have observed the very reverse,—relief of cerebral and ocular inflammation. We may remark, that a practice very analogous to the sincipital burning of our author, the application of caustic potash to the crown of the head, is much employed in diseases of the eyes by some of the ablest oculists in this country,—among others, by Mr. Guthrie; but we are not aware that this practice, less alarming to the feelings of our countrymen than the fiery proceedings of our Gallic neighbours, has, by a very natural analogy, been extended to diseases of the brain.

2. M. Gondret was naturally desirous of obtaining a means of effecting the surface to an extent sufficient for producing an efficient counter-irritation, in a manner less shocking to the prejudices of some physicians and less painful to the feelings of patients, than combustion in general, and sincipital combustion especially, are found to be. This means he considers that he has obtained in his "*pommade ammoniacale*," the preparation of which is thus described: Take of hog's lard seven drachms, of oil of sweet almonds one drachm and a half, and of liquid ammonia (of twenty-five degrees) from five to six drachms. Melt the hog's lard, mix with it the oil, and pour them into a wide-mouthed bottle with a ground-glass stopper; then add the ammonia, close the bottle, mix the contents together by shaking, and keep the mixture in a cool place.

The evidence adduced by the author of the efficacy of this application, not merely in those chronic cases to which, prior to its adoption, he would have thought his heated iron suitable, but in acute inflammatory diseases, in which blisters are the counter-irritants ordinarily employed, is most decisive. Regarding its influence over this latter class of diseases he thus expresses himself:

"With this liniment, a few minutes suffice for its good effect. The disease, it is true, is not always entirely cured: its intensity only is abated, and it is on this account so much the more easily managed, and, under suitable treatment, the result is almost always fortunate. Even in inflammations of a considerable degree of severity, the disease, being attacked at first by the vesicating liniment, miscarried as it were, and appeared to be reduced to the mere artificial inflammation of the dermis. Even notwithstanding previous attacks of the lungs, the disease runs a mild course, and terminates from the sixth to the tenth or eleventh day. I can speak as confidently regarding the inflammation of many other tissues, such as the mucous and serous membranes, the fibrous tissue, &c. The same application produces the same results. An excellent use may be made of this remedy in the different forms of angina; in croup, for instance. The rapid action of the vesicating liniment has another advantage, easy to be perceived,—the physician can order the application of the remedy, and immediately know its effects. The phenomena which he observes enlighten his diagnosis, and make him acquainted with the real indications of cure. This is the proceeding which I constantly pursue, and I cannot express the satisfaction I feel in having adopted it." (*Gondret*, p. 56.)

The author's experience of the effect of his "pommade ammoniacale" was, like his observations on actual cautery, the subject of a memoir to the Royal Academy of Sciences, and of a report from the commissioners of that learned body, MM. Portal, Hallé, and Percy. They express themselves strongly in favour of the remedy. It is much more prompt in its action, they say, than cantharides, exempt from the distress occasioned by the absorption of this medicine, and capable of much more varied effects. If the skin is to be excited, perspiration reestablished,

and some subcutaneous engorgement to be dissipated, light and hasty frictions accomplish these objects. If a rubefacient effect is sought, its application for one or two minutes, spread thickly on linen, answers the purpose. In case vesication is required, a similar application for five or ten minutes produces the effect. On the other hand, should absolute cauterization be sought without alarming the timidity of patients or the prejudices of certain medical men against the use of fire, a somewhat longer application attains this end, so desirable in many neuralgias.

This ammoniated preparation leads us to the consideration of certain washes recommended to public notice by Dr. Granville. The analogy which suggests the transition consists in the facts that, whilst ammonia is the avowed basis of M. Gondret's preparation, the same alkali is at least an ingredient in the washes of Dr. Granville, and, so far as we can decipher his Sibylline leaves, an important ingredient. We would say, moreover, that, on comparing the candid statement of M. Gondret of the effect produced by his pommade, and that of Dr. Granville regarding his "antidynous lotions," divesting the latter, as far as we can, of "shocks (dissimilar, however, in every respect to that of electricity or electro-magnetism,)" and other mystic matters, we find the greatest possible resemblance between the effects attributed by the writers to their respective remedies. Here, however, the parallel between the two authors ceases; for, whilst nothing can exceed the openness and candour of the Frenchman, and whilst we cordially concur in the praises bestowed by the commissioners of the Royal Academy of Sciences on his disinterestedness, modesty, and "*loyauté*," we have not been impressed with any signal display of these qualities in the work of Dr. Granville.

A few parallel passages from both authors descriptive of the effect of their remedies will, we think, show that their nature is essentially the same.

With regard to the promptitude with which pain is allayed by his liniment, M. Gondret describes a very acute rheumatism of the posterior muscles of the neck under which M. Renauldin, principal physician of the hospital Beaujon, laboured.

"A small wound was made over the most painful point. When the pain raged with intensity, M. Renauldin requested that the liniment should be applied to the wound itself. This was done and, instead of increasing the pain, it imparted great relief. M. R. declared, *during the action of the pommade, he experienced only pleasure on account of the cessation of the pain.* With the liniment I recommend, *a few minutes* suffice to produce this good effect." (*Gondret*, p. 55-6.)

"I found that without charring the skin or producing an eschar, such combinations would on a mere application to the external surface of the body, give rise to peculiarly energetic effects on the disease, *in the brief space of a very few minutes* (sometimes seconds only.) As the nature of the first impression in all cases of pain was ascertained to be an instantaneous removal of the pain itself, even where no other phenomenon was required or permitted to arise from any of the applications in question, I gave to this class of counter-irritants the name of antidynous." (*Granville*, p. 51.)

"Others *appear to consider the artificial pain as a relief, and a few even have hailed that pain as a pleasure.*" (*Ibid.* p. 86.)

Both rapidly blister.

"Do we require for any reason a vesicating effect? It is sufficient to leave the liniment applied for *a period varying from five to ten minutes,* and the physician before quitting the patient can see the effect of the remedy which he caused to be

applied when he entered, an advantage which *boiling water* or boiling oil could produce more quickly, but *too abruptly, too painfully,* and too irregularly, to entitle them to the preference." (*Report to the Royal Academy of Sciences; Gondret,* p. 45.)

" But the relief of pain, in a manner almost magically rapid, is not the only phenomenon produced by antidynous or counter-irritating lotions. Another very striking characteristic of them is that of raising, if necessary, *in a few minutes,* a complete and genuine blister, equal to that produced by the best blistering ointment after several hours' application, or by *scalding water,* but accompanied by *pain much less intense in degree,* and much shorter in duration." (*Granville,* p. 53.)

Both, besides blistering, produce a rubefacial or cauterizing effect according to the length of time they are applied.

" Do we wish to produce rubefaction, we apply a portion of this *pommade* one or two lines in thickness spread on linen, for one or two minutes. . . . Is it necessary to imitate the cauterizing action of fire, we shall succeed by prolonging the application." (*Report to the Royal Academy of Sciences; Gondret,* p. 45.)

" Without necessarily producing rubefaction and cauterization, although, if sufficient time for the purpose were allowed, the same combinations would produce the latter phenomena also." (*Granville,* p. 51.)

We shall notice only one coincidence more, regarding the principle on which both these applications relieve pain.

" Taking as a guide of practice this sentence of Hippocrates: of two pains formed simultaneously, but in different parts, the stronger obscures the other; if an internal organ is affected with a pain arising from an inflammation or an arthritic or neuralgic metastasis, in an instant it will be easy to lessen it or to cause it to disappear, by opposing to the prevailing pain a new pain. In these cases, the remedy cannot be applied with too great promptitude." (*Gondret,* p. 54.)

" It now remains for me to assert, as a crowning of all this, that so soon as the pain of the lotion is felt, that instant the inward pain, for the removal of which it was applied, is suspended and at last vanishes." (*Granville,* p. 88.)

It would be easy, but superfluous, to multiply quotations to prove that the immediate effects of these two agents are identical; and when we compare the diseases in which they are employed by their respective authors we find that the same ultimate effects result from them, in other words, that they remedy the same complaints. From these facts and the statements of the authors, the inference seems inevitable, that both individuals are employing the same agent, ammonia, in a more concentrated state than it has hitherto been usual to employ it, either as volatile liniment or in any other way, and that the sole difference between them consists in the one having selected an unctuous or saponaceous vehicle, whilst the other diffuses his ammonia through " liquid odours." With regard to discovery, M. Gondret does not claim any beyond the application of a counter-irritant familiar to the profession at least since the days of Sir John Pringle, in a state of concentration sufficient to accomplish objects not formerly expected from it, and in a convenient form for application. Neither does Dr. Granville's claim of originality rest on the employment of *ammonia ;* on the contrary, his 24th case was one of epilepsy observed by him in the *Hôpital de la Pitié* in 1816 and 1817, and cured under the care of M. Serres by means of a cerate composed of purified butter of cacao and liquid ammonia applied over and along the spine, by which vesication and a discharge were produced. Now, the commissioners of the Royal Academy of Sciences state that M. Gondret sometimes substitutes this very butter of cacao for his ordinary unctuous

vehicle, six drachms of the former replacing an ounce of the latter. M. Gondret, be it remarked, is an old labourer in the field of counter-irritation, and though his book does not furnish positive evidence of it, for he does not stickle for priority and does not often insert complete dates, we think it probable that the counter-irritant employed by M. Serres had been originally suggested by him. On this point, however, in the absence of positive evidence we have no right to insist, nor is it necessary that we should. But we have proof, even in the work before us, that M. Gondret used his "pommade ammoniacale" as early as 1821, (see p. 35,) whilst the date of the first application of Dr. Granville's lotion is eight years later. M. Gondret's memoirs to the Royal Academy of Sciences must have been printed as early as 1818, at least; as the first edition of his work, *sur le Feu,* to which the Academy's Report is attached, was published in the end of that year or beginning of 1819. Even the present work was published a year before that of Dr. Granville. Considering these circumstances,—considering, moreover, how ardent a cultivator of medical literature Dr. Granville has ever shown himself,—we cannot help feeling some surprise that the labours of M. Gondret should have entirely escaped his notice; especially that that book should have done so, of a portion of which (that relative to the "pommade ammoniacale,") his own wears the appearance of being a mere amplification.

Whether the coincidences of thought and language which have struck us in perusing the two works and of which our readers have been furnished with a few specimens, arise from the one book having formed the foundation of the other, or whether they are only examples of that accordance of opinion which two individuals engaged, unknown to each other, in the investigation of the same subject may be supposed to display, Dr. Granville alone can positively determine. With regard to our own opinion on this point, besides that we are wishful to acquit Dr. Granville of plagiarism, finding, after making the reasonable deductions from the extraordinary verbosity and inflation of his style, that nothing is predicated of the one preparation, that is not declared to be true of the other, we are firmly of opinion that the agents employed by these two writers, are in all essential respects the same, and that Dr. Granville was labouring under some extraordinary delusion when he fancied he had made "*discoveries.*"

We think that the evidence adduced by M. Gondret shows that strong liquid ammonia is a very efficacious instrument of counter-irritation, capable by slight varieties of management of more varied effects on the surface, and consequently on disease, than most of those with which we are acquainted, and that, whilst it is capable of doing much good, it is difficult to conceive that any evil can be produced by it, excepting from a want of judgment in its application which it is scarcely possible should occur. It would have given us much pleasure to add, that Dr. Granville, whilst he had contributed by the mass of facts he has brought forward to confirm the views of M. Gondret, had written a sensible volume to diffuse the knowledge of a valuable remedy among the profession in our own country. The former praise (he may thank us for it or not) we think is his due; but to the latter he has no claim; for, as we remarked in our last number, he has addressed no work to the profession. Conscious,

apparently, of some demerit, he has made an anticipatory appeal from the decision of a competent tribunal, the profession, to that of an incompetent one, the public. This appeal, however, will avail him not : he is before a professional tribunal, and its award he must abide. One tithe of the talent and judgment which on many occasions he has displayed, would have enabled him to write a book on this subject for which he would have been praised and thanked. Some strange mistake, some unaccountable condition of bewilderment has led to the production of one, which will be for a few weeks a byword and a scorn, and then (let us hope) will be forgotten.

3. The subject of the third means of derivation employed by M. Gondret, cupping, is introduced by a description of the effect of atmospheric pressure on the body generally and the various functions, such as respiration and suction which are directly dependent on such pressure, and on those, the circulation and cerebral functions, which receive from it a secondary influence. This physiological account, which will be found between the 83d and 98th pages, does not present any novelty, but it is accurate and might be read, especially by the general reader, with advantage. The following examples of the pathological effect of diminished atmospheric pressure are interesting to all.

" In the month of December, 1747, sudden deaths were very frequent at Pluviers in the Gâtinois, and M. Duhamel observes that in this same month the barometer fell in less than two days one inch and four lines, that is to say, from twenty-eight inches to twenty-six inches and eight lines, which certainly might produce great effects on the living body, since the variation of an inch in the barometer indicates a difference of about a thousand pounds in the weight of the atmosphere."[*]

" At the summit of the Vosges, wounds and ulcers bleed easily, and the formation of the clot in hemorrhages is difficult; ophthalmias are very obstinate; catarrhal quinsies are very common and difficult of cure; hernias easily become strangulated, and metastases are frequent; pregnant females are subject to difficulty of breathing, and to floodings and miscarriages. It is often necessary to convey patients to the foot of the hills, that they may respire an air less attenuated.[†] These observations of Saucerotte have been confirmed by those of M. Hippolite Cloquet. M. Dolomien when in feeble health, his chest being especially delicate, having ascended to the *Pic du Midi* (a height of 9,000 feet) experienced speedily extreme weakness, considerable oppression and a spitting of blood, which placed his life in real danger, till he was conveyed down the hill. More robust travellers, however, such as MM. de Humboldt, de Saussure, and others, attained to a higher degree of atmospheric elevation without experiencing such painful effects." (p. 96-97.)

The opinion of the author regarding the effect of atmospheric pressure is not confined to its conditions which are relatively to men abnormal, but he thinks that in a diseased state the ordinary atmospheric pressure is a source of distress.

" When the health is impaired, the weight of the body and consequently that of the atmosphere becomes extremely perceptible. Thus, in cerebral inflammation or plethora, there is often a sense of weight in the head so considerable that the patient cannot raise the part; and it is in the highest degree probable that an organ, the seat of a sanguineous engorgement, cannot form an equilibrium against the pressure of the atmosphere without suffering." (p. 100.)

We are not aware of any facts which lead to the conclusion that the

* Duhamel, Encyclopedie Method.; t. l.　　† Saucerotte, Mélanges de Chirurgie.

normal pressure of the atmosphere is injurious to our organs, sound or healthy, and we cannot discover in the circumstance here stated by M. Gondret, any evidence that such is the case.   When the brain is the seat of hyperemia or inflammation, the head feels heavy and the act of raising it is painful, but so is that of moving it laterally or rolling it; it is moving the diseased organ, not raising it only, which occasions distress; or, if more distress is experienced in raising it, this arises from the movement itself and the muscular exertion required to effect it in this direction being greater.   Lying with the head raised, so far from augmenting the distress, is one of the means employed by medical men to remedy it. The benefits of the revulsion effected by cupping did not require, and certainly could not receive, any confirmation from this vague speculation.

Dry cupping, a remedy strongly recommended by Hippocrates and Celsus, and more recently by Prosper Alpinus, had fallen in modern times into comparative desuetude excepting among the Germans; the author, as it were, resuscitates it, and produces evidence of its being an important agent in alleviating, and, in many cases, removing disease. Affections of the heart and various inflammatory diseases having their seats in the head, chest, epigastrium, and uterus have been removed by it.   The mode in which the relief is effected is abundantly simple, and we shall state it in the words of the very favorable report of the Royal Academy of Sciences on this part of M. Gondret's labours, a report to which the names of Descamps, Portal, Hallé, and Cuvier are attached.

" The surface of the skin on which the cupping-glass is applied tends to supply the *vacuum* formed, and, as it swells, is raised into the cavity of the glass.   The vessels and the *areolæ* of the subcutaneous cellular tissue dilate at the same time, and draw into the canals and expanded spaces a greater quantity of liquids, and these liquids are withdrawn in a circle (de proche en proche) from the neighbouring parts." (p. 113.)

M. Hallé asks the question, to what extent does the influence of cupping-glasses extend?   We scarcely need remark that no distinct answer is given to this question.   M. Gondret's opinion of the extent is tolerably wide, since in a case of affection of the heart, he applies his instruments round the pelvis, between the nates and on the upper part of the thighs. M. Hallé in a similar case places his, we think more rationally, between the shoulders.   The results appear to confirm the predilection of M. Hallé, for in his case a cure is effected, in that of M. Gondret, relief.

The proceeding adopted by this latter gentleman was evidently founded on a doctrine to which we have already had occasion to advert. It is one of great antiquity and still prevails in France.   According to this doctrine there are especial sympathies between some points of the surface and certain organs when in a state of disease, the sympathizing points not being those in the vicinity of the suffering organ but at some distance.   Thus the integument of the inferior extremities is the situation selected for counter-irritation when the brain is the suffering organ; when the lung is so, it is that of the inner part of the arm.   Barthez held the opinion that the sympathy existed especially with the surface of that perpendicular half of the body, right or left, in which the suffering organ was situated.*   The British practice, as is well known, is in general to select

* Mémoires sur le Traitement méthodique des Fluxions qui sont les Élémens essentiels dans divers genres des Maladies; (Mém. de la Societé Méd. d'Emulation, t. ii.)

a portion of the surface lying over or closely bordering on the organ affected. The question between British and continental practice is one, in the language of the humoral pathology, between derivation and revulsion, and we own that we have never discovered any justifiable ground for the preference shown by our continental neighbours for the latter principle. Those peculiar remote sympathies, such as that between the legs and the brain, have ever appeared to us to be rather assumed than proved, rather the result of fancy than observation, and we have not always found their advocates in perfect accordance on the sympathising points. Were we to express the result of our own observation on these sympathies in general, we should say that they manifest themselves most decidedly between organs and the portion of the surface lying over them. We think this is abundantly exemplified in the applications of counter-irritants to relieve pain of the head, chest, bowels, and along the course of the spine.

VI. Before taking leave of the subject we think it right to caution the reader against expecting more from counter-irritation than it is able to accomplish. The cases are rare in which we should consider it more than subsidiary to internal medicine and properly regulated diet. A degree of exaggeration often occurs in works like those before us; but readers in general, being aware that the effect of the assiduous cultivation of any branch of science or study is to impart very high ideas of its importance, will know how to make the requisite deductions from statements in some degree overcharged, provided they do not transcend the ordinary level of such exaggeration. The following passage, however, does transcend this level, and we regard it as calculated to convey very deceptive ideas indeed, particularly to the class to which the work is especially addressed, of the power of external medication.

"On looking at these lists, it cannot be denied that the resources which the endermic physician, or he who treats diseases by external applications to the skin might command, are not inferior to those of the ordinary physician who relies principally on external [internal] remedies. Those resources or agents for internal [external] application would afford him the means of producing on the human body three several and successive degrees of artificial counter-irritation, by simply attending to any existing difference in the respective energies of the agents employed, or to the manner and length of time of their employment; or finally, to the various modes of preparing those agents for use." (*Granville*, p. 38.)

Through the haze of a very blundering phraseology, we can yet discern enough of the sense or rather nonsense of this passage to learn that the author places the power of external medication on an equality with that of internal; and this he does, because by outward remedies three several and successive degrees of counter-irritation may be induced. Is all we are capable of effecting by internal medicines—our various evacuants, our mercury, our antimony, our narcotics, our tonics, &c.,—but equal to three degrees of cutaneous irritation? If we look to the solvent and absorbent powers of the digestive canal, its acute sensibilities, and its wide and prompt sympathies, no judicious physician can hesitate to give it a general preference as a *medium* of producing a prompt and powerful action on the constitution over the cutaneous surface, even when we do not merely irritate the latter, but make it besides a vehicle for introducing powerful medicine into the system. In acute disease, threatening life,

counter-irritation of the surface deserves confidence only as an auxiliary not as a principal; and the instances are rare in which the endermic method is adopted for powerfully medicating the constitution, and these instances are the exception not the rule.   To the former of these allegations, the only one, be it remarked, involved directly in the question between Dr. Granville and ourselves, this gentleman may object his own case of pericarditis.   This case we should have quoted in full, but it occupies five pages, and we are compelled to refer to page 297 of his volume, where the reader will find it.   Dr. Granville, after being exposed when heated to a draught of cold air, feels ill on awaking in the morning, with pain in the thorax, " extending from the front to the back, through the heart, and down the left arm," and very irregular pulse.   Medical assistance was sent for, but there was some delay and " the case must soon have become desperate."   In three quarters of an hour, however, a young gentleman arrives and draws three cupfuls of blood.   The pain still continues.   A strong ammoniated embrocation is applied over the pained parts, and is kept on "until they become red hot, and burn vigorously."   " In proportion as these effects were produced, the inward pain or stab-like feeling decreased, until at last it completely subsided and passed away."   In an hour Dr. G. dressed, " and drove out in the carriage to his usual avocations for the rest of the day, without the slightest inconvenience.   The pain never returned."   Knowing that the application of the lotion should seldom last longer than from one to six or eight minutes, for Dr. Granville tells us so (see page 82 of his volume), and allowing ten minutes for the bleeding, an ample allowance, we find that pericarditis, one of the most formidable diseases to which the human frame is liable, was completely cured within twenty minutes!   Every practical physician, every sound pathologist will at once declare that there is some mistake in this prompt cure of pericarditis, or, on the strength of one case of Dr. Granville's, they must abandon principles deduced from the observation of thousands of examples.   Were we asked to give a name to this disease so rapidly removed, we should call it a combination of neuralgia and fright.   We beg to remark that we do not consider ourselves as impeaching Dr. Granville's practical skill, in saying that he has erred in the diagnosis *of his own case.*

VII. The office of expressing our opinion of these works in any respect not already noticed will not detain us long.

1. Dr. Epps's little work we should not have noticed at all, it having been before the public for several years, but from its direct connexion, in subject, with the other more recent publications.   It is written in a modest and unpretending spirit and in a clear and plain style, though with an occasional touch of quaintness.   We recommend it to the attention of our readers not merely on account of these qualities, estimable as they are, but, moreover, for its good faith, earnestness, and the value of the information it imparts.   We have already recorded our dissent from one of his principles of action or rather inaction, conceiving that he has occasionally inculcated rather a cowardly acquiescence in disease than a scientific correction of it, and we would say, too, that he attributes more preventive and curative power to issues than we have generally found them to manifest; still our general opinion of the work is very favorable.

2. We have already had occasion to intimate that counter-irritation and the various modes of effecting it have been more the objects of systematic study in France than in this country. This is no evidence that in the former country therapeutics have been more successfully cultivated than here. It rather appears to us conclusive of the opposite position; for where acute disease is most successfully combated, there will be found the fewest chronic ailments for the operation of heated iron and other counter-irritants; and many a triumph has been afforded to such means, which English practice, especially the judicious use of mercury, would have forestalled. However this may be, it is much to the credit of M. Gondret that, writing on a subject so much cultivated in France as to have become almost trite, his memoirs to the Royal Academy of Sciences, of which his volume may be regarded as the collective republication, should have drawn forth unqualified approbation from the commissioners of this distinguished body, and especially so, that one of these approving commissioners, M. Percy, should have been previously himself very much distinguished in the same field of investigation.* That in the present day any one in France could invest such matters as actual cautery and cupping glasses with interest, is abundant proof that there is something novel and consequently interesting in M. Gondret's application of these remedies, and that he has pursued the subject with zeal. This is the secret of his success and of the approbation he has received from high quarters: his heart is in his subject, and he consequently labours it with effect.

3. In conclusion we shall remark, that there are two classes of writers, those who write because they have something to say, and those who do so because they wish to say something. Fulness of knowledge and of thought is the inspiring genius of the one class; vanity and the love of display is the demon of the other. M. Gondret belongs to the former class; whilst Dr. Granville's present work places *him*, beyond all question, in the latter; and with this brief notice we finally dismiss it to that oblivion which (we hope) soon awaits it.†

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* See his Pyrotechnie Chirurgicale, ou l'Art d'appliquer le Feu, and the articles *Moxibustion* and *Seton* in the Dict. des Sciences Médicales.

† Since the preceding article was printed, Dr. Granville has published, in the Lancet of October 27th, the formulæ for the preparation of his lotions. These we shall insert in Part Third of the present Number. We hope the reasons advanced by Dr. G., in this communication, for his having deferred to make known the composition of his lotions sooner, are satisfactory to his own feelings. We take no credit to ourselves for having contributed to this event by the strictures in our last Number; and we must say that we have found nothing in his recent communication that makes us at all regret having assumed the tone which characterizes the former article, and also the present, as far as Dr. Granville is concerned.—ED.

ART. III.

1. *Clinique des Maladies des Enfans Nouveau-nés.* Par F. L. I. VALLEIX,
   M.D., Membre titulaire de la Société Médicale d'Observation de Paris,
   &c.—*Paris*, 1838.
Clinical Observations on the Diseases of New-born Infants.   By F. L. I.
   VALLEIX, M.D., &c.—*Paris*, 1838.

2. *De Tumore Cranii recens Natorum sanguineo Symbolæ.   Quibus,
   viro experientissimo* ELIÆ HERSCHEL, M.D., &c. gratulatur JOANNES
   AUGUSTUS BURCHARD, M.D., &c.—*Vratislaviæ*, 1837.   4to. pp. 38.
*Contributions on the subject of the Sanguineous Tumour of the Skull of
   New-born Infants.*   By J. A. BURCHARD, M.D., Lecturer on Medicine
   in the University of Breslau, &c.—*Breslau*, 1837.   4to. pp. 38.

WE hail the appearance of M. Valleix's book with real pleasure.
For, if it be true—and this will hardly be questioned—that the existing
knowledge of infant pathology is lamentably deficient, it is equally cer-
tain that we can only hope for its advancement through a system of minute
and careful observation, such as that adopted by the school of which the
author is a disciple.   And though we should have felt much better pleased
had his experience furnished him with materials for a complete treatise
on that singularly obscure branch of the science, yet, on first view, far from
being disposed to object to his researches on the score of their limitation,
we fancied we should find in this a source of satisfaction.   We looked
upon it as a sort of mute guarantee of the soundness and good faith with
which he had elaborated the subjects undertaken.   We presumed that
M. Valleix had wisely preferred the really useful task of establishing truth
on a few points to the empty—though unfortunately too much prized—
honour of copying from others, or of speculating through the entire range
of a subject.   Whether our first impression has been strengthened by
intimate acquaintance with the book will appear as we proceed.

The author gives considerable evidence of what is always cheering to
meet with—earnestness of purpose.   In the opening chapter of the volume
will be found a careful description of his manner of observing.   This is
an almost completely novel, and certainly a most gratifying feature in
pathological works.   It shows that scientific men are not now contented
with the mere fact that those works are ostensibly founded on bed-side
observation, or that a number of cases are scrupulously detailed in them :
they require, in addition, an account of the method and instruments by
which the alleged facts were obtained.   It is not very long since the act
of observation was looked on as work fitted only for drudges.   Systema-
tists who, like Pinel, condescended to allow that established facts were
really necessary materials in the construction of doctrines, were still con-
tented to allow their cases to be collected by their pupils.   But the qua-
lifications for observing are now admitted to be of a different order.   The
labours of Louis, more especially, have shown what observation really is,
and what may be effected by its aid ; and have consequently raised it to
its just eminence as an intellectual pursuit.   And it will be admitted that
if minds of severe character are justified in demanding an account of the
means used in observing, and of the precautions taken for the avoidance
of error, when the subjects examined are adults, such an account is still

more necessary in the instance of new-born infants. By the side of these helpless little beings, whose means of expression are so few and so imperfect, the ordinary difficulties of clinical observation are increased tenfold. We have known highly judicious practitioners sink in this, to them, novel situation, into absolute ciphers. We have seen them unable from the mere want of the habit of close and methodic observation, and the impossibility of employing the routine system of question and answer, to which they were accustomed, to draw from the phenomena of the disease any sure notions of its nature. As it seems to us, therefore, M. Valleix has conferred a double favour on the profession by the careful exposition of his mode of observing. He then allows each reader to estimate for himself the degree of credit his statements deserve, and furnishes those disposed to avail themselves of them with the means of obtaining—if we may so speak—the maximum of evidence from the minimum of facts, and hence of easily rising above the degree of accuracy in their judgments respecting infantile disease, to which they could otherwise attain. M. Valleix, however, is not the first who has striven to improve the method of examining infant patients. The excellent work of Billard contains directions full of sagacity and, for the most part, simple in their application, for smoothing the difficulties of that embarrassing task: and the recent volume of Mr. Dendy, noticed in our last number, shows that the profession in this country are no less aware of their magnitude, and eager to lessen it.

As M. Billard remarks, the chief circumstances that render the examination of the new-born infant so puzzling a matter are, 1st, the absence of speech; 2dly, the agitation caused by it; 3dly, the cries that accompany that agitation. But the two latter obstacles are not constantly present; there are periods, though they be rare, in which infants are at rest. These brief moments should be dexterously made use of for the examination of such phenomena as are affected by the agitation of the infant, while the state of the remaining symptoms may be ascertained when the habitual restlessness reappears. Hence a natural division into two classes of symptoms. The first of these should be got through, according to M. V., when the patient sinks into a doze after being fed or washed, &c. At such times the state of colour, the expression and spontaneous movements of the face, the pulse, the heart's pulsations, the number of inspirations are the chief points for investigation. The naturally calm and expressionless character of the face is from the first changed by disease: the features contract, rugæ appear in the forehead, the eyebrows are drawn near each other, and the labial commissures carried outwards. In pneumonia M. V. found this altered state of the features persistent; in aphthæ (muguet) intermittent. In the latter affection he plausibly ascribes the facial contractions to intermittent colic, especially as he has observed them to cease at the same instant as a copious alvine evacuation took place. But the *same* expression appears, according to our author, under every variety of suffering; nor does observation bear out the statements of Jadelot as to a special cast of physiognomy distinguishing each particular disease. We confess we were always inclined to look on the descriptions of Jadelot as somewhat visionary, and are gratified to find our opinion justified by the authority of M. Valleix.

M. Valleix furnishes us with some interesting results regarding the *normal* frequency of the pulse during the first days of existence. Few practical men can have failed to ascertain for themselves the extreme difficulty of accurately counting an infant's pulse, and none can have been contented with most of the expedients advised for facilitating the process, such as putting the infant to the breast, slipping the finger within its mouth, &c. These and similar contrivances are either useless as means of quieting the little patient, or, what is still worse, from their nature quicken the heart's action. A very convincing proof of the difficulty of the attempt appears in the fact that in many of Billard's cases no mention is made of an examination of the pulse, while he states that in others where this was examined its normal frequency varied from *eighty* to *one hundred and eighty* beats in a minute! M. Valleix's method, consists merely in gliding the finger on the radial artery, while the infant dozes, and following without controlling whatever movements it may make. This simple plan succeeded so well, that in thirty-four cases the author was enabled to count the pulse eight or nine times out of every ten attempts. We must, however, regret the very small number of subjects he found in the fit conditions of perfect health and quietude for its application. His observations were made on thirteen infants only, aged from two to twenty-one days. The lowest number of beats was 76, the highest 104, the mean 87. We do not contest the accuracy of these results; although they will be found to differ very materially from those of Mr. Gorham noticed in a former number of this journal, (Brit. and For. Med. Rev., Vol. V. p. 269.) The results in the following table relating to subjects aged from seven months to six years approach very closely to those of Mr. Gorham.

	Group of oldest Subjects.	Group of youngest Subjects.
Number of subjects	3	30
of observations made on them	25	316
Mean age	64.7 months.	17.17 months.
Mean number of pulsations	108.31	124.47

M. Valleix rejects, and on fair grounds, the auscultation of the heart for the purpose of ascertaining the *frequency* of pulsation: the act of examination inevitably irritates the infant. In a note to this paragraph is a curious document by M. Lediberder relative to the frequency of the pulse previous to the section of the funis. In six examinations made the first minute after expulsion he found the mean number of double pulsations 83.3. This average augments rapidly, for in sixteen infants ausculted after the third or fourth minute of extra-uterine life it equalled 160. How much of this increased rapidity should be attributed to normal change in the activity of the circulation, and how much to uneasiness of the subject, it is not easy to determine.

The main obstacle to examination during the second stage, when the infant is more or less agitated, arises from the impossibility of distinguishing cries of impatience from those produced by real pain, whereby the observer is prevented from estimating the tenderness of various parts. The healthiest infants in the world will scream under palpitation of the abdomen, if laid, as they usually are, on their backs. We have, it is

true, seen a plan employed with some success by M. Ricord for quieting
their clamours, that of seizing the infant by the chin and gently rolling
the head from side to side; but the calm thus produced lasts for a moment
only.   M. V. appears to have been more fortunate in his contrivance.
Availing himself of the eagerness with which infants stare at a strong
light he supports them in a sitting posture opposite a window.   Their
attention, he says, is almost immediately riveted on the light, nor will
pressure call it away if there be no tenderness present.   Such, according
to M. V., is the success of this plan, " that he was enabled in various
cases, in those of aphthæ for example, to ascertain by its help the existence
of general abdominal pain or even of local tenderness limited to a small
space, such as the epigastrium or right iliac fossa."   We sincerely hope
that this method may be found as successful in the hands of others, but
we confess that we have not found little infants so observant of anything,
during the existence of a disagreeable external impression, as to lead us
to have much confidence in the plan proposed.

Our author's experience leads him to admit the practical superiority of
immediate to mediate auscultation in infantile diseases; and he invariably
failed in obtaining satisfactory results with the stethoscope, while the
application of the ear was at once decisive.

Among thoracic affections, two only are noticed by our author.   The
quantity of matter devoted to these is exceedingly unequal; for while 158
pages are occupied in describing pneumonia, the history of pleurisy is
despatched in a few lines.   The reason of this will appear hereafter.   In
analyzing the copious details on pneumonia we shall give the greater part
of our space and attention to the chapter on symptoms, as it comprises
the most practical information.   We shall only notice such points of the
morbid anatomy as either confirm or form striking exceptions to the laws
ascertained respecting the disease in adults.   The number of cases on
which the article is mainly founded amounts to fifteen only, collected, as
all others in the volume, at the Foundling Hospital at Paris.   The evi-
dence of one hundred and fourteen others, supplied by M. Vernois, is,
however, brought to bear on a number of important questions.   It is
necessary to state also, that three only of M. Valleix's patients were
affected with simple pneumonia; in the others the disease was complicated
either with aphthæ, œdema, erysipelas, or tubercles.   The subdivisions
made in consequence of these complications reduce so materially the
numerical value of the results, that they lose all shadow of a claim to be
considered as expressing general laws.

A notable difference between the infantile and adult lesion presents
itself early in M. V.'s description.   The section of the diseased tissue was
never *granular* in the former; on the contrary, when the substance of the
lung was indurated it presented, on division, a perfectly smooth, clean, and
shining surface, resembling polished marble; when softened it lost its clean
character somewhat, but retained its other peculiarities.   Even when *torn,*
as it was in one case, no sign of granulation was produced.   Moreover,
the morbid parts, instead of being, as in the hepatization of adults, friable
and easily penetrable by the finger, occurred in the form of hard and
resisting nuclei.   At least such was its condition in twelve cases out of
fourteen; in the remainder, the diseased parts were either softened or con-
sisted of a mixture of softened and indurated substance.   These peculia-

rities, added to the *total* absence of crepitation, its *rapid* precipitation in water, the deep violet hue of the expressed liquid, seem to prove strong dissimilarity between the hepatization of infants and adults; while, on the other hand, there is an almost perfect resemblance between the anatomical state noted by M. V. and that described by Louis under the name of *carnification.*

The comparative rarity of double pneumonia in the grown subject, especially if the lungs be free from organic disease, is well known. The following table shows a new difference between the laws of that affection in early infancy and in adult age. By adding MM. Valleix and Vernois' observations together, we find the number of examples of

<blockquote>
Pneumonia of the right lung 17
left 0
double . . . . . 111 = 128.
</blockquote>

Of these 111 double cases, the disease predominated

<blockquote>
on the right side . . . . . . 59 times,
on the left 10;
and was equal on both . . . . 42 = 111;
</blockquote>

while, as regards the part of the lung affected, (doubling M. Valleix's numbers so as to count each lung as a distinct case,) there appear of

<blockquote>
Pneumonia of base and summit . . 44 examples,
base alone 44
summit alone . . . 20
Disseminated lobular pneumonia . . 31 = 139.
</blockquote>

A similar predominance on the right side exists in the adult, though not to so great an extent; but in the adult the summit is much less frequently affected than in the ratio deducible from the last table. Indeed, as M. Louis has shown, primitive pneumonia of the upper lobe is, in the adult, almost wholly confined to subjects aged upwards of forty-five; a fact which fully accounts for the greater mortality from the disease when seated in the upper lobe.

The other lesions found in the parenchyma of the lungs were vesicular emphysema in three cases, and tubercles in one. In the tuberculous subject only were there any traces of pleural inflammation apparent; and in this case, judging from their locality and age, they were unconnected with the pneumonia. In 123 cases which fell under the notice of M. V., pleurisy occurred only twenty times; a fact which proves, contrary to the opinion of many, the extreme comparative rarity of pleuro-pneumonia in infants.

The Symptomatology next demands our notice: and here the subdivision of cases renders anything like close analysis impossible. We can only allude at all fully to the symptoms of the *simple* disease, glancing incidentally at any very wide departure from their ordinary train in the complicated cases.

Foremost in the list come difficulty of breathing and hurried respiration; the former having existed in ten, the latter in eight, out of fourteen cases: the intensity of these symptoms was proportional to the extent of disease; the inspirations were short, deep, and precipitate, and attended with elevation of the shoulders, averaging forty-four or fifty-eight in a minute, or so rapid as to baffle the attempts made at counting them. On the other hand, in the cases complicated with œdema, the frequency of

respiration was below the natural standard. Its most striking character, however, and one which exists in simple œdema neonatorum, was extreme irregularity.

According to our author, the cough ranks high as a diagnostic sign; and this because of its frequency of occurrence, and its "belonging especially to pneumonia." That it was frequent, appears from its having occurred in ten out of fourteen, or, more correctly perhaps, out of twelve cases; but where is the proof of its being peculiar to pneumonia? We find none in the pages before us: they contain no attempt at distinguishing it from the cough of bronchitis, or tubercles. Our author possibly means that this symptom was peculiar to pneumonia, as compared with œdema and aphthæ; a proposition few will be inclined to dispute. Be that as it will, the cough (in the simple cases) occurred in short paroxysms, ceased the last day of life in two instances, and was not noted the five last in the remaining one. That the hepatization continued to spread notwithstanding the cessation of this symptom, was proved by the physical signs; a fact, by the way, of high practical interest.

M. Valleix remarked in several cases the issue of a slightly sanguinolent, thick, and viscid froth from the mouth; and, in eighteen out of twenty-two pneumonic subjects, M. Vernois, to whom he communicated his observation, noticed a similar phenomenon. This froth is evidently a bronchial product, as M. Valleix found a considerable quantity of similar matter in the trachea and bronchi of all subjects attentively examined after death.

The importance of percussion, as a sign of the growth and progress of inflammation of the infant lung, is scarcely inferior, in M. Valleix's judgment, to that which it possesses in the adult. It appears that, in every case of simple pneumonia, complete dulness, or at least obscurity, of sound, contrasting strongly with the sonorousness of the healthy parts, existed in some quarter of the chest. It is true, as we are told, the extent of this dulness was uniformly more limited than that of the hepatization, as disclosed by the inspection after death; but this disparity is not to be wondered at; for the rapidity with which the disease spreads is so great that a few hours suffice to change notably its boundaries. Thus, a remarkable case is given at length by the author, in which the chest is noted as being "of normal and everywhere equal sonorousness, the respiratory murmur pure and vesicular," on the 10th; whereas, on the 11th, "the whole posterior aspect of the right side gives a dull sound on percussion, as well as the inferior third of the left. A distinct bronchial souffle is heard over the same extent of surface." (p. 124.) Here this extensive hepatization (and it still further increased in the seventeen hours intervening between the last examination and death,) required only twenty hours at the most for its production. Such great strides may well make the practitioner tremble.

But, on the other hand,—independently of the lobular form of pneumonia, wherein the absolute inutility of percussion is granted by M. V., —when the lesion is superficial, the employment of that instrument of enquiry is ineffectual. In one case of this kind, his favorite method is exculpated on the score of the disease having been completely latent; but we cannot forget that its prime value in the adult consists in its making manifest the presence of the malady when all rational symptoms

(as, we admit, very rarely occurs,) are wholly wanting. M. Vernois found considerable dulness in twenty out of twenty-two cases; slight obscurity in the remaining two.

Our author has employed percussion in further investigation of the question concerning double pneumonia, to which we have already alluded. His cases go to show that the disease is very rarely double *primitively*; that the seizure of the two organs is successive, not simultaneous. He adds, " In truth it is only on the approach of death, and when it has gone through its periods for a long time in one lung, that pneumonia attacks the other; and the inflammation of the latter, which is almost always very limited in extent, may even be regarded as a secondary lesion." (p. 134.) There is considerable vagueness about this statement; nor is it easy to discover whether its author meant it to apply to adult and infant pneumonia both, or to the latter alone. Admitting either supposition, the phrase " for a long time" stands unsupported by evidence, and is, we strongly suspect, incorrect. How can long periods, in the infantile disease at least, be spoken of, when its rapidity of progress is such as results from our author's own researches?

Among the auscultatory phenomena, the subcrepitant and crepitant rhonchi are enumerated, but allowed no great importance, as diagnostic signs. The former was totally wanting in some very severe cases, and usually appeared, when it did exist, during the last days only. The crepitant rhonchus was heard but twice: still it is not to be wholly disregarded as a sign. Indeed, its rarity alone seems to deprive it of firstrate value in this respect; for in both these cases it was the sole, or almost the sole phenomenon indicating the existence of pneumonia. To us the subcrepitant rhonchus seems too lightly passed over; for our author's analysis establishes its presence in ten cases, at least, out of fourteen. Situated in all of these at the postero-inferior two thirds of both sides of the chest, even where the pneumonia was limited to one lung, it possessed the special characters of that subcrepitant rhonchus pathognomonic of acute capillary bronchitis in the adult.[*] Hence it seems probable the parenchymatous inflammation took place in some instances by extension from the smaller tubes. Of this, however, we are not by any means certain; inasmuch as the infant tissue differs in structure sufficiently, for aught that is known to the contrary, from that of the adult, to cause the production of a different form of rhonchus under similar morbid conditions of the vesicles. M. V. leaves this question untouched, and is rather obscure on the matter generally; for in this section he speaks of the subcrepitant rhonchus as a sign of pneumonia, while afterwards (p. 172) he evidently wishes us to understand that he had ascribed it to bronchitis, and allowed that in the infant, as in the adult, it distinguishes that affection from inflammation of the pulmonary tissue. For our parts, admitting, in these cases, the conversion of one disease into the other by simple propagation of the morbid action along the continuous surface, we see nothing therein clashing with Louis's announcement that pulmonary catarrh is not observed to pass into pneumonia, for the simple reason that his statement referred to the adult alone. A tracheal rhonchus existed in four cases, in two of which it supervened along with and

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[*] Vide British and Foreign Med. Review, No. XI., p. 36.

at the same time as the local symptoms. As it existed only in the severest cases, it may be classed among the signs most to be dreaded. This observer did not trace any very distinct connexion between it and the bronchial spumous matter already described. In every instance where the dull sound was tolerably extensive, the respiratory murmur was either diminished in force or replaced by a bronchial souffle; and well-marked bronchophony coexisted with both these conditions.

The febrile phenomena are next discussed, and among them the state of the pulse deserves mention. In the simple cases it grew very rapid on the appearance of the first local symptoms; no acceleration took place in the œdematous infants; while in those affected with aphthæ it rose greatly on the eve of the earliest symptoms developing themselves, and then fell. When rapid, it was also strong, full, and hard: but, to whatever degree they had previously existed, it invariably lost all the characters of reaction some time before death. This last peculiarity is, according to M. V., common to all the affections of new-born infants. In the simple cases, the heat and anxiety keep pace with the increased frequency of the heart's action; in the others they underwent no change. From these facts, and a variety of minute discussions on some other febrile symptoms, M. V. concludes that "the importance of carefully distinguishing simple from complicated pneumonia is clearly shown: for high fever exists in the former; whereas, if slight quickening of the pulse appear in the latter, as it is far from always doing, it lasts only for some hours previous to the development of local symptoms: and it is equally clear that the period of the affection at which the patient is examined must, in reporting cases, be accurately recorded. For, if the examination be delayed to an advanced period, no fever, but a general collapse, will be observed; whence the easy conclusion that febrile reaction is wanting in the parenchymatous inflammation of new-born infants." The fugitive character of the fever had its share, no doubt, in betraying Billard into the latter erroneous conclusion.

We pass over the symptoms connected with the digestive organs, and arrive at the sections referring to the duration and prognosis of the disease. In the simple and œdematous cases, the mean duration was three days and a quarter; in those complicated with aphthæ, twelve and a quarter. Every one of M. Valleix's patients perished; but, as he informs us with considerable naïveté, "we must not conclude thence that pneumonia is necessarily mortal in new-born infants." We trust not: his cases were almost all complicated with serious affections, and were all observed at an hospital where, as it appears from a crowd of passages in his book, almost every disease terminates fatally. This frightful mortality he considers to depend, in a great measure, on the utter neglect of all hygienic care under which its victims suffer. Can the recovery of these infants in any fair proportion be hoped for, even under the most excellent treatment, when their vital powers have been previously reduced to languishment by the want of such natural excitants as exercise, cleanliness, and breast-milk? That the disease is highly dangerous we question not for a moment; and, until a series of observations be made under juster conditions than the present, this we believe to be the safest and most correct conclusion.

The mean age of these patients at the moment of seizure was about

ten days; two days and twenty days being the extremes.   M. Valleix has
not met with any cases corroborating Billard's notion that pneumonia may
be developed during intra-uterine life.   Both sexes appear equally liable
to the disease; its greater frequency in the male in after-life,* no doubt,
originating in his mode of life.   General debility appears to act as one of
its exciting causes: upon the influence of temperature, and its changes,
no information of a decisive kind is given.   Such are the etiological in-
ferences of our author, and meager enough they are.

The frequency of the disease at the Enfants Trouvés is always very
great; but it may occasionally appear even as an epidemic.   At least,
of 114 infants opened by M. Vernois, without selection, during the
months of February, March, and April, 1837, 113 presented hepatization
of one or both lungs.

M. Valleix is right in saying that, "in cases where we possess no po-
sitive knowledge, probabilities are valuable; that it is better to take these
as guides in practice than have recourse to mere random and chance
essays;" and for this reason we by no means contemn his struggle to
obtain a ray of therapeutic light from the analysis of the only five cases
in which "any treatment of the pneumonia was undertaken."   The light
thence derived is, however, far from being dazzling; and it will quite
suffice for us to say that the employment of leeches and tartar emetic, of
opiates and emollient drinks, are recommended.   Blisters, in his opinion,
and in ours too, should be erased from the list of remedies for the dis-
eases of new-born infants.   Those who desire further detail will find an
abundance in the present section, but, as we believe, nothing really
novel.

Pleurisy is shown by our author's experience to be a rare complaint in
the new-born infant.   It occurred in one eighth only of the pneumonic
cases collected by him and M. Vernois, and in no single instance did it
exist alone.   In consequence of this, but especially on account of his
possessing no accurately detailed examples of the affection, he does no
more than allude to its existence.

The next 260 pages are devoted to the history of a disease but little
known in this country, the *muguet* of the French, the *milk-thrush* of our
own writers.   Many practitioners, indeed, are not aware of the dis-
tinction between it and common aphthous ulceration; yet, so early as the
time of Amatus Lusitanus, their difference had been acknowledged,
while to the French observers of the present day we owe the clear esta-
blishment of their total dissimilarity.   This they have shown, not only as
regards the local appearances in the mouth, but also their various other
phenomena: aphthæ being a greyish ulceration, never attended with
formation of true false membrane; while *muguet*, or milk-thrush, con-
sists of pseudo-membranous matter exuded from the mucous surface,
without the smallest trace of abrasion.   Among these observers,
Guersent, Lélut, and Billard deserve particular mention.   The German
pathologists, too, have evidently recognized the disease; and, so far as
the description of the adventitious product goes, one of their number,
Jörg, gives tolerably accurate information.†   Doepp, physician to the

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* At Paris, the ratio of pneumonic males to females is about as 3 : 1.
† Handbuch der Kinderkrankheiten, s. 498.

St. Petersburgh Foundling Hospital, states, in a statistical report, that
scarcely a single infant admitted into that institution escapes *aphtha*: he
adds, that it appears in the form described by Guersent and Billard
under the name of *muguet*; that he has always seen it as a symptom of
other diseases; and signalizes the error of those writers who ascribe to it
a *vesicular* form.*   The gravity of the two affections differs so enor-
mously at Paris and St. Petersburgh, that it seems fair to doubt their
identity: at the former place *muguet* cuts off five sixths of those attacked,
while at the latter it is "a very harmless complaint."   The Russian
practitioner is not of this opinion, however, and, with amusing self-
complacency, attributes the innocent character of the disease among his
patients to the treatment adopted; and mainly to his spurting breast-
milk frequently into the mouths, while the French deprive the infant of
that fluid. (*Op. cit.* s. 153.)

The distinction is formally admitted, too, in the recent work of
Drs. Evanson and Maunsell.   Though the chapter devoted to it is a mere
abridgment from Billard, yet they have evidently themselves seen the
disease, and even observed it so far advanced that "the white fluid ex-
uded from the nostrils;" a state which M. Valleix does not appear to
have witnessed.   But, in perusing most of the writings on this
affection, it becomes manifest that their authors, though many of them
admit the frequency of intestinal disorder as a complication, view it as a
local disease only.   It plainly appears that their attention has been
engrossed completely by the buccal lesions.   Now, according to M.
Valleix, "it is not simply an affection of the mouth, but a disease having
a much more extensive seat in the digestive tube, and giving rise to nu-
merous secondary lesions." (p. 203.)   This important conclusion, to
which we shall gradually lead the reader, is drawn from the analysis of
twenty-four cases of unobjectionable exactness.

The following is an abridged account of the general course of the
disease.   The age of the patients was less than one mouth, and the
malady did not in any instance continue till the end of the second; their
mean height was one foot six lines and a half (Fr.), their strength good.
With one exception, the complaint was developed *in the infirmary*,†
without any evident contagious influence.   All the cases occurred in the
months of July, August, and September.   In seventeen out of twenty-
three subjects, erythema of the buttocks and thighs were the first symp-
toms, preceded the appearance of the false membrane in the mouth by a
mean term of six days and a half, and was followed by yellow diarrhœa;
which latter appeared in eighteen cases before the buccal pellicle.   The
pulse, at first eighty or ninety in a minute, rapidly acquired fulness, and
rose to from 116 to 140.

Swelling of the papillæ at the point of the tongue was the first local
symptom, and was followed by bright redness of that organ and the rest
of the mouth, with ulcerations of the anterior palate.   Two days and a
half, on an average, after this, the first specks of muguet appeared on
the tongue, whence it spread to the cheeks and palate.   Slight tympa-
nitis appeared in twenty out of twenty-one cases, attended with abdo-

* Analekten über Kinderkrankheiten, Heft iii. p. 152.
† The importance of this statement will appear by and by.

minal tenderness on pressure, either general, iliac, or epigastric, which
was always found to correspond to an intestinal lesion of more or less
gravity; vomiting took place in five subjects; in twenty, the malleoli or
heels ulcerated. The close was marked by collapse; the pseudo-mem-
brane diminished in quantity; a sort of sub-inflammation took place in
various superficial parts, or abscesses formed in their sub-cutaneous
tissue.

The mean duration of the disease in the fatal cases was seventeen days
and a half; in the two instances of recovery, sixteen and a half.

No trace of organization was ever discovered by M. Valleix in the
membranous product; nor was it in any case united to the subjacent
mucous surface by the smallest vascular filament. The change that
takes place in its degree of adhesion to the mucous surface (a point
noticed by all observers) seems to him an argument in favour of its ex-
isting under the epithelium in the mouth. At least, it is easy to conceive
such position would render it at first closely adherent, while its subse-
quent looseness would naturally follow the rupture of the cuticle. (p. 354.)
Further on he states that, on close examination, the muguet appeared
formed by the epithelium itself, thickened and slightly softened, (p. 355;)
but on this we have to remark, that muguet, as he elsewhere informs us,
was found, with all its characters, in the stomach and intestines, where
no epithelium exists: the latter statement, therefore, can scarcely con-
tain a correct theory of its nature. Again, it was found closely adherent
in those intestinal cases: the presence of epidermoid structure cannot,
therefore, be reasonably adduced in explanation of its adhesion in the
mouth. Moreover, in the œsophagus, the pseudo-membrane, to increase
the perplexity of the matter, always appeared "situate *upon* the epithe-
lium." (p. 247.) Is it likely that its structure and relations would differ
in the œsophagus and mouth? The truth is, M. Valleix seems somewhat
at a loss to determine the nature of the membranous matter; but, for
our parts, we incline much more to consider it an exudation upon than
a morbid state of the substance of the epithelium. This has nothing to
do, be it remembered, with the question of its distinction from aphthæ;
the author's testimony on this point is unequivocal: the epithelium was
in every instance, and in every part, perfectly free of erosion. This fact
is not, as would at first sight appear, irreconcileable with his inclination
to regard the muguet as formed of layers of hypertrophous and softened
epidermis; for it is fair to suppose that the lowest layer might retain its
natural character; but it surely argues strongly against the reality of such
structure.

We cannot afford space for any notice of the prolix details regarding
the morbid anatomy and symptoms of the affection, and pass at once to
a question of real interest, its nature. In order to establish his main
proposition, that which predicates the merely symptomatic character of
the buccal lesions in muguet, it was necessary for M. Valleix to prove
two points: first, that in every instance, without exception, some other
organ or tissue was affected; and, secondly, that the symptoms of such
affection as invariably preceded the formation of the plastic matter. We
have, *inter labores et tædia*, satisfied ourselves that both these positions
are demonstrated by the author: the mucous lining of the digestive tube
did present notable lesions, clearly inflammatory, in every subject; and

that diarrhœa and fever appeared before the membranous product, has already been announced in the summary with which this division of our article commences. Such is evidently not the state of things in simple local inflammation of the mouth. But there is another fact upholding M. V.'s doctrine that must not be forgotten; it is, that one well-marked case of muguet occurred wherein no lesion of the mouth was detected, the pseudo-membrane having been deposited in the œsophagus alone. From all this it results that "muguet is a disease characterized, first, by febrile action and enteritis of variable severity; next, by a pellicular inflammation of the mouth: and, lastly, by a similar condition of the œsophagus." The author has, so far, observed no example of the pseudo-membranous inflammation of the mouth as an idiopathic affection, or as a complication of any other disease than those of the alimentary canal. But this is not all: advancing a step farther, he enquires whether the existence of the pseudo-membranous product, either in the mouth, œsophagus, or any other part of the digestive tube, be *necessary*, in order that the disease should be characterized. From two cases fully reported at this stage of the work, he evidently infers the negative. In the first of these every important symptom of muguet existed, with the exception of the false membrane; in the second, a case forming a natural transition from that just mentioned to the ordinary examples of the affection, the pellicular product was formed only during the last two days of existence, at a period when, to all appearance, the malady had run its course: but this decision (and it is, we conceive, a just one,) leads to a new enquiry, namely, wherein lies the difference between muguet and enteritis? Three cases of simple enteritis, faithfully recorded in the author's pages, answer this enquiry. They show that in that disease the same lesions, and the same important symptoms, regularly occurred as in the affection known, from its outward visible sign, by the name of muguet; and which sign, therefore, constitutes a mere symptom, and of second-rate importance, instead of the essence of the affection.

The fundamental identity of the two affections being admitted, it becomes a natural question to determine why the membranous formation should take place in some cases of enteritis rather than in others. On this point there is little to satisfy curiosity in M. Valleix's book. He assimilates the buccal exudation in muguet, as others have done before him, to the pseudo-membranous matter formed in the mouth of adults in the course of some acute and chronic diseases; adding, that "its great frequency in new-born infants is accounted for by the weakness of the subjects; for accurate research has proved that debility strongly predisposes to that species of lesion." (p. 487.) We can, however, discover no evidence of the pure enteritic subjects having been gifted with stronger powers of resistance than the sufferers affected with the pseudo-membranous exudation. To us it seems clear that the crowded and ill-ventilated state of the wards at the Enfants Trouvés, and the great neglect under which their inmates labour, act the chief part in giving this character to enteritis. Of the twenty-seven cases of the disease observed by M. V. in that asylum, twenty-four were, as we have seen, attended with pseudo-membranous inflammation; whereas, in private Parisian practice, muguet is almost unknown, and in this country it is equally uncommon. There is no proof of its transmission by contagion. The use of the feculæ as

food is reckoned by our author one of the most influential causes of the disease; an opinion that tallies to a certain extent with that of Jörg. That writer, indeed, informs us that, so frequent is the disease, from the very general use of improper food during the four or five days subsequent to birth, and antecedent to application to the breast, that it is only of late the Germans have been persuaded it is not a necessary attendant of that period of life, and been taught that the infant may escape it through proper dietetic treatment.[*]

The affection is not known to attack infants of more than two months old; and, as may be collected from the following table by Billard, the hottest months of the year are those in which it chiefly flourishes.

January, February, March, of 290 patients, 34 were affected with muguet.
April, May, June   235   —   35   —
July, August, September .   . 213   —   101   —
October, November, December, 139   —   48   —

Thus, it formed one half of the amount of disease during the three summer months, and about one sixth only during the others; besides, the number of cases in the former period (101) nearly equal that (117) in the remaining *nine* months of the year. The amazing frequency of the disease, (for, adding the above numbers to that of the infants observed in M. Baron's wards in 1834, we have 1574 patients, of whom 358, or somewhat less than a fourth, were sufferers from it,) coupled with its summer predominance, and contrasted with its rarity in private practice, shows that its existence must be attributed almost wholly to the internal arrangements of the hospital in which it occurs. Its fatal character is frightfully established: of 193 cases, 153 terminated by death!

The author's general conclusion on the treatment is, that "the most energetic means are ineffectual, when the infant is not withdrawn from the influence of those causes through which it contracted the disease: in the contrary case, the most simple treatment is crowned with success." (p. 455.)

Proceeding to the Diseases of the Head, M. Valleix first directs our attention to those bloody cranial swellings of infants to which the expressive term Cephalæmatomata[†] has been applied. In an early Number (British and Foreign Med. Review, Vol. I., p. 182,) we gave a pretty full account of what was then known respecting these tumours. Some novel facts and specious speculations in M. Valleix's work call for further notice of the subject on our parts. We shall take occasion to notice, at the same time, the second work placed at the head of this article, which is the production of a teacher of medicine and a man of experience. Dr. Burchard's essay is very creditable to his talents and learning: it contains several valuable numerical documents on the subject of which it treats, of some of which we shall avail ourselves.[‡]

Cephalæmatoma, as understood by M. Valleix, is, from its situation, *sub-aponeurotic*, *sub-pericranial*, or *super-meningeal*. Of these varieties the last, seated between the dura mater and bone, is exceedingly rare, and very little of a satisfactory kind is as yet known respecting it; while

[*] Op. cit. s. 496.
[†] From κεφαλη, caput, et ἁιματωμα, tumor sanguineus.
[‡] The author had evidently not heard of the opinions of M. Valleix, though they were originally published so far back as 1835, in the Journal Hebdomadaire.

the simply contusive character of the first, both as regards its mode of production, its external and internal anatomical characters, agreed upon as they are by all observers, relieve us of the necessity of more extended notice. To the remaining species, therefore, alone,—that in which the fluid is effused between the pericranium and bone,—shall we confine our remarks. To it are undoubtedly referrible also the sanguineous collections described by Dr. Burchard as situate between the two laminæ of the bone, or between its internal plate and the pericranium.

It results from M. Valleix's enquiries, that the external characters of cephalæmatoma vary at different periods of its existence, as follows:— When examined on its first appearance, (that is, a few hours, a day, or even more, after birth,) the tumour is small, free from tension, and the bone forming its base may be easily felt by pressing vertically downwards. The integuments are at this period of a deep red hue, and slightly œdematous; the swelling without pulsation; and the characteristic circular prominence as yet unformed. M. Valleix expresses his belief that Naegele's statement with respect to the existence of pulsation in these tumours is not entitled to much confidence; and we confess that we shared in his belief until we had perused Dr. Burchard's essay. But, as a case is there given at length in which very evident pulsations are stated to have been felt by a number of persons, especially when the infant cried, it seems impossible any longer to doubt their occasional occurrence.

As to the period at which cephalæmatoma originates, or is first detected, Dr. Burchard gives us the following particulars respecting the fifty-three cranial swellings observed in his forty-five patients. They were discovered

Before parturition, in	2 instances,
During or shortly after labour, in	24
The second day after ditto, in	4
The third ditto ditto, in	15
The fourth, fifth, sixth, seventh, tenth, and eleventh; in	1

In two cases the period was not noted.

The tumour soon, according to M. Valleix, acquires its full growth, sometimes in a few hours; in more rare instances continuing to increase in size for a day or two. When fully developed, the swelling is tense, rounded, accurately circumscribed, fluctuating, its investing skin of natural colour, and free from œdema. It is surrounded more or less completely at its base by a narrow, hard prominence, usually called the osseous ring. This formation, according to Michaelis, always exists, and is pathognomonic of the affection. Others have denied the constancy of its presence; and, among them, Zeller* gives a certain number of cases, admitted on hearsay, in which it was altogether wanting. In our author's patients this production was always found, except when the infant died a few hours after birth; and consequently, as we may fairly deduce from a case briefly alluded to in his work, *before sufficient time had elapsed for its formation.* He further states that, by first placing the finger on the bony ring, and then pushing gradually towards the

* De Cephalæmatomate. –Heidelbergæ, 1822.

centre of the tumour, the surface of the skull underneath may be always felt with ease.

There is a strange divergence of opinion among writers as to the frequency of this affection. Naegele, whose extensive experience none will question, met with seventeen cases only in the course of twenty years' practice. Hoere advances as his belief that it occurs once in every hundred births;* Strewe states that, of 250 infants admitted to the Berlin hospital, not one laboured under it;† M. Baron, physician to the Foundling Hospital at Paris, supposes it to exist in one only of every five hundred new-born infants; and Doepp informs us that, at the St. Petersburgh establishment, thirty cases occur annually, which, calculating from the number of yearly admissions, gives one case in 150 births.‡ Among 1937 infants, M. Valleix detected cephalæmatoma four times only. Dr. Burchard, on the other hand, met with forty-five cases, in hospital and private practice, in the space of seven years: and, to judge from the following calculations, it would appear that Breslau is singled out from the rest of the world for frequent development of this affection; for, among 1402 infants born at the Clinical Institution there in seven years, thirteen were affected with cephalæmatoma; whereas, the frequency of the disease at some other Germanic towns is much lower. Thus, there occurred at

Dresden, in	8	years, among	1972	new-born infants,	6	cases.
Würtzburg, in	13	..	1992	....	2	
Marburg, in	7	..	910	....	4	
Berlin, in	8	..	1314	....	5	

Several towns, indeed, are enumerated where no single example of cranial blood-swelling was noted, even during a longer space of time. Thus, Moschner and Kurzak state that no instance of cephalæmatoma is recorded to have occurred in 18,292 births at the Prague hospital; though the state of health, &c. of all the infants is very accurately noted down. To us it seems extremely probable that some of Dr. Burchard's cases were nothing more than examples of the *caput succedaneum* of the German, or *sero-sanguineous œdema* of the French writers.

This observer has made some curious enquiries on the moral, hygienic, physiological, and other conditions of the mothers of his patients. Of his results, however, the only seemingly important one is the following. It appears that the infant affected was the

First-born in 29 cases,	Eighth-born in 1 case.
Second in 8	Twelfth in 1
Third in 1	Fourteenth in 1

In four instances, the number of children borne was not ascertained. This great predominance of primiparous women among the mothers of cephalæmatomatous children, which had been already noticed by Busch and others, is explained in some measure, in the present instance, by the fact that more than one half of the accouchements at the Clinical Institution of Breslau were of primiparous females. Dr. Burchard does not mention their proportionate number in his private practice, which sup-

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* De Tumore cranii, &c.—Berolini, 1825.
† De Cephalæmatomate, &c. -Giessæ, 1828.
‡ Analekten über Kinderkrankheiten, Heft iii. s. 156.

plied him with twenty-one of his cases.   Thirty-four of the infants were
males, nine females : the sex of two was not noted.

Before considering the etiology of these tumours, we must put the
reader in possession of their anatomical characters, as minutely investi-
gated by M. Valleix ; and, in order to understand these, certain peculi-
arities of the infant cranium, so well described by Haller, must be borne
in mind.   Among other points, this fact was established by him, that, if
the pericranium of a new-born infant be removed, and the skull even
slightly compressed, drops of blood ooze forth by a multitude of orifices
between its radiated fibres, and by their union form a layer of liquid on
its surface.   M. Valleix's investigations led him to further results, having
most important bearings on the disease under consideration.

"On examining the bones of the skull closely, I saw that the internal table was
formed *first ;* that numerous vessels, ramifying on its surface and forming a rudimen-
tary diploe, *next* deposited a multitude of osseous fibres, and *finally*, that at a later
period a layer of compact tissue, constituting the external table, was produced. Thus
there are three distinct stages in cranial ossification.   At birth the parietal prominences
alone, traversed as they are by the majority of the nutritious vessels, have reached the
final stage.   And it is not a little remarkable that those very parts of the bone, where
at a later period both tables unite into one and all trace of diploe is lost, are the only
ones that at birth consist of two distinct tables separated by true diploe.   For the first
fifteen days of life, or in many instances for a much longer time, the bones attain *the
second degree only of ossification*, except at the parietal prominences: they have a well
formed internal table and a vascular diploe, but *no external table*." (p. 515.)

Now it follows from this, the author adds, that if pressure, especially
circular pressure, be exercised on the cranium when only advanced to the
second degree of ossification, the blood must tend to ooze from its sur-
face.   This peculiarity of structure and its consequences are, as may be
foreseen, brought into play in M. V.'s endeavour to explain the formation
of cephalæmatomata.—But to turn to the anatomical characters of the
tumour.

M. Valleix invariably found the scalp in the natural state and the
aponeurosis unaffected.   The investing pericranium was always thickened,
but never ossified as admitted by Chelius.   Its internal surface was smooth,
polished, and serous-like, instead of being as elsewhere, (that is, in the
unaltered parts and even close round the edge of the tumour,) roughened
by adhering cellular filaments.   At the line of attachment of the peri-
cranium to the osseous ring (*bourrelet*) existed a fimbriated prominent
border resulting from the rupture of a thin membrane, that lined the
pericranium and invested the denuded skull within the limits of the tumour.
The aspect of this pseudo-membrane varied ; it appeared to consist either
of reddish yellow granules of mucous character, or of condensed cellular
tissue, or of a thin cartilaginous lamella.   In each instance its cranial and
pericranial portions, though distinctly continuous, were of different
structure.   The osseous " bourrelet" surrounded the tumour completely
in four of the cases ; in the remaining two it was wanting in the vicinity
of the sutures.   The bony matter of which it consisted was easily remov-
able with the nail from the surface of the skull, which retained its natural
curve underneath.   It was of triangular form and applied by its base to
the cranium, reaching a maximum height of a line and a half.*

* These dimensions prove its vast activity of growth; the cranial bones themselves
are only from a sixth to a third of a French line in thickness at birth.

M. Valleix classifies it with the adventitious products termed *osteophyte* by Lobstein.   On some points respecting it the two authors, whose observations are under examination, differ considerably.   Thus, for example, whenever M. Valleix found the bony ring imperfect, the imperfection always existed in the vicinity of the sutures; Dr. Burchard, on the contrary, states that he almost always found the superior margin, that next the sagittal suture, the most prominent.   Again, Busch who has examined seventeen cephalæmatomata doubts the existence of the bony ring altogether, and attributes its supposed presence to " an optical illusion."

In four cases the contained blood was black and fluid; in another, partly coagulated; in the sixth, mixed apparently with a little pus.

It is not our intention to trouble our readers with a catalogue of the numerous hypotheses that have been successively advanced as to the cause of these tumours.   The most important among them, that of Michaelis, ascribing their production to disease of the bone, M. Valleix appears to have refuted by his description of the normal condition of the bones of the fœtal cranium.   But something may still be urged in defence of Michaelis's theory.   It involves as a postulate the preexistence of the tumour to birth.   Now, as M. Valleix allows, several facts seem to countenance this view of the case.   In the majority of instances, cephalæmatoma has been observed after *easy* labour; in a case attended by M. Fortin the tumour was discovered in the passage by the finger; Osiander, too, asserts that it may be sometimes felt before the rupture of the membranes; and it has existed in infants extracted by the feet.   But these arguments are not, according to M. Valleix, unanswerable.   For, he urges, the phrase easy labour is one of vague meaning; and though labours, that last from five to six hours and terminate naturally, may deserve that title, yet even in these the head may have suffered very strong pressure either in traversing the os uteri or in sliding along the pelvis.   Indeed, this appears to be fully proved by the fact of sero-sanguineous œdema having very frequently followed such labours.   In the case of M. Fortin where the tumour was detected, the head had undergone the pressure of the os uteri.   Finally, the mere fact of breech presentation constitutes no proof of the head having wholly escaped pressure; numerous examples of the application of the forceps after the birth of the feet and trunk are on record.   The importance of these considerations in M. V.'s theory, will presently appear.   Meanwhile, a fact observed by Dr. Burchard deserves to be mentioned here, as it seems to have an important bearing on this question.   In 1831, that gentleman removed twenty-seven infants from the uteri of their mothers, who were among the victims of the cholera, by the Cæsarean operation.   In one of these fœtuses, he found a tumour seated on the right parietal bone.   On dividing it, in presence of two brother practitioners, he discovered to his surprise in place of the bony substance two laminæ which were extended into a small pouch, and contained recent, florid, coagulated blood; in other words, a cephalæmatoma.   The vessels of the skull, even the minutest among them, were filled with blood.

In the course of his enquiries on the development of the skull, M. Valleix was struck by the almost constant presence of an ecchymosis between the bone and pericranium in the new-born infant.   From the position of this ecchymosis, its form, and its absence in the last born of

twins, he concluded that *circular pressure, acting at the centre of the passage traversed by the fœtal head,* must be its cause, and hence the neck of the uterus the compressing agent.   But further, when the ecchymosis was of considerable extent, our author always found a layer of cellular substance under the pericranium, and in case of an effusion of fluid blood existing on the skull osseous particles were also deposited.   Now this peculiar state occurring with almost unchanging constancy, like cephalæmatoma, on the right parietal, is evidently the first stage of that formation.   The same cause acting with varying intensity will produce a simple red coloration, infiltration, destruction of tissue, with effusion of fluid blood, or the real sanguineous tumour.   But, as may be enquired, how comes it that cephalæmatomata are so rare, while their cause is, according to this doctrine, in every birth constant and inevitable?   M. V. has anticipated this objection, and replies that "the most favorable cases for the production of the tumour are those in which a very large portion of the parietal, to the exclusion of the rest of the skull, presents at the orifice of the uterus, and that such cases are of rare occurrence."

For the train of close and plausible reasoning from which these conclusions are drawn we beg to refer the reader to the original volume. The new explanation is undoubtedly simple and ingenious; but further experience must be had of its solidity before it becomes entitled to general adoption.   And this, more especially, because a case of breech presentation in the second born of twins is recorded by Dr. Burchard in which the tumour existed, though it is not easy to conceive how any notable pressure could have acted on the head under the circumstances.   Besides, if that observer did really in one case, not to speak of the infant removed from the uterus by the Cæsarean operation, diagnosticate cephalæmatoma before the rupture of the membranes, (and there can be little doubt of the fact, inasmuch as the occurrence took place in the presence of several medical practitioners, to "whose great joy" the diagnosis was proved correct on the birth of the child,) the ingenuity of the explanation will not counterbalance the evidence against it.   On the other hand, Dr. Burchard has given us at length the anatomical descriptions of the affected parts in nine infants, and from a careful examination of these, we are bound to say that they go to confirm M. Valleix's doctrine respecting the physiological condition of the bone.   We are therefore of opinion that the latter has correctly established the predisposing cause of the affection; but must regard its exciting cause as still sub judice.

With respect to the natural termination of these cases, the only one M. Valleix had an opportunity of observing under the proper conditions ended by the gradual extension of ossification from the osseous ring to the centre; the cure was slow, occupying upwards of forty days.   The bone remained thickened.   Dr. Burchard found a peculiar cicatrix at the end of a year indicating the situation of the ossification of the outer lamella.

The prognosis is by no means serious; M. V.'s patients it is true died, but they died of intestinal affections perfectly unconnected with the cranial tumour.   In respect of treatment, the only debateable point refers to the propriety of opening the tumour, or leaving it to the slow process of natural absorption.   If it be large and after a few days' trial apparently disinclined to decrease in size, incision becomes, according to M. V.,

advisable. The opening should be proportional in size to that of the swelling; a free incision will do no harm, for the extreme vitality of the parts renders adhesion a very rapid process, and exposure of the denuded skull little to be feared. The operator must, however, be careful to keep clear of arterial branches; the division of a mere ramuscule caused fatal hemorrhage in a patient operated on by M. V., and he states that Smellie has recorded a similarly unfortunate occurrence. The system of treatment adopted by Gölis, that of producing suppuration by the seton or by caustic potass, cannot be too strongly reprobated. Dr. Burchard gives a tabular view of the treatment adopted in his cases. He comes to the conclusion, that leaving the tumour to the unassisted efforts of nature, a plan which he at first feared to adopt, is followed by as beneficial results as any of the active modes of treatment devised, excepting perhaps incision with the knife.

M. Valleix is silent on the medico-legal questions to which cephalæmatoma might give rise.

The radiated structure of the parietal bones, the appearance of the sub-pericranial ecchymosis, that of the pseudo-membrane and of the osseous " bourrelet" are well shown in some neatly executed coloured figures. Dr. Burchard has also given us three respectable engravings of the same subject.

M. Valleix next proceeds to treat of apoplexy, of which he enumerates two species—meningeal and cerebral hemorrhage. Of these the former, as is known, usually takes place in the great cavity of the arachnoid. In the cases reported by previous observers the apoplectic seizure took place at the moment of birth; M. Valleix, however, gives one of extreme interest wherein the cerebral symptoms did not supervene till the sixth day after that event. An example of an exceedingly rare state, hemorrhagic effusion into the lateral and third ventricles, is next added. Though imperfectly observed, it is of value in so far as it places the reality of such a lesion beyond a doubt.

Of hemorrhage into the substance of the brain, a still rarer occurrence, three cases are reported. The first of these, observed by M. Vernois, is detailed with great minuteness and serves to show the similarity of symptoms to those resulting from the same lesion in the adult. The only signs of the disease in more advanced age, which seem to have been wanting in this instance, were diminished sensibility and the usual altered condition of the organs of sense. It is not improbable, however, that the difficulty of estimating their state was the true cause of the apparent difference. The paralysis existed on the side of the body opposite the hemorrhage; the seat of the effusion was the same as it occupies most frequently in the grown subject—the corpus striatum and optic thalamus; and the anatomical characters were precisely those of an apoplectic clot and cavity of the same age, about seventy-eight days, in the adult. One of the most remarkable features of the case, symptomatically considered, was the rapidity with which the paralysis disappeared. The paralysed limbs had on the tenth day acquired a certain power of resistance, on the twenty-third their restoration was almost complete, and at the end of the second month the only remaining trace of the malady consisted of a slight traction of the right labial commissure. The infant, however, eventually perished of pneumonia.

In one case the hemorrhage appeared in the form of a number of red spots scattered through a softened part of the substance of the brain, and constituted the anatomical form of apoplexy known in the adult as *capillary*.

These cases are of great interest, and seem to show that cerebral hemorrhage is a far more frequent affection among new-born infants than among those who have lived a few years. The treatment of the disease should, judging from the identity of lesion and symptoms, be based on the same principles as guide the practitioner in combating it in the adult patient.

With our author's fifth chapter, devoted to the analysis of thirty-one cases of œdema neonatorum, we shall not long detain the reader, as it contains little real novelty. M. Valleix regards the morbid state of the respiration and weakened circulation as the proximate cause, and constitutional debility and external cold as the predisposing causes of the disease. A striking proof of the accuracy of this opinion is furnished by the numerical results given by the author. The following table shows at once the frequency of the affection at Paris and the influence of season in its production. Of 644 infants admitted into the medical infirmary of the Enfants Trouvés in 1834, 341 were œdematous, and divided as below among the different months.

Coldest Months.				*Warmest Months.*			
January	. 50.	October	. 24.	April	. . 49.	July	. . 12.
February	. 37.	November	. 33.	May	. . . 22.	August	. . 0.
March	. . 56.	December	. 36.	June	. . . 19.	September	. 3.
	Total = 236.				Total = 105.		

M. V. would have rendered this table much more useful by giving the total number of patients admitted in each month.

The mortality of œdema neonatorum at Paris is not numerically given. This looks ill, especially as it is incidentally admitted to be " frightful." Yet Palletta affirms that forty-two out of forty-three of his patients recovered by leeching.

The work terminates by a short history of two cutaneous affections, " pustules" and pemphigus. A strong conviction, it appears, exists among the non-medical officers of the Enfants Trouvés, that all diseases of the skin in new-born infants are of syphilitic origin. Now, the consequence of this persuasion is that every infant on whose person any one of those maladies appears, and of " pustules" especially the frequency is very great, is deprived of its nurse and transferred to the infirmary. This transference takes place though every function be in its normal state, and the firmness of limb, robustness, and general vigour of the subject be indicative of sound health. Now let the reader attend to the following: " Of thirty-six infants conveyed to the infirmary during the months of July and August 1835, twenty-eight were admitted for " pustules," three for pemphigus. Of these three were after a short stay discharged cured, two were removed to the ophthalmic ward, and all the rest, twenty-six in number, or more than the five-sixths, perished of a disease caught in the infirmary. Twenty-one of them fell victims to muguet." (p. 665.) Now, even admitting that these unfortunates were tainted with syphilis, their deliberate murder must be pronounced unjustifiable; but how shall it be characterized when we learn, as M. V.'s

praiseworthy researches prove, that neither of these affections are syphi-
litic, and that they are of so innocent a nature as absolutely to require no
treatment! These facts give an appalling picture of the recklessness with
which human life is sacrificed in this institution; and it is with pain we
add that we have ourselves at an analogous establishment, the Hôpital
des Enfants Malades, observed somewhat similar occurrences. It is a
notorious fact that, from one of its wards devoted to the reception of very
young infants, scarcely one escapes alive. The little beings recover per-
haps from the affection for which they were admitted, but, instead of
being then removed at once, they are left to the tender mercies of infec-
tion. They vegetate on till they catch some contagious disorder; even
from this they may be fortunate enough to recover, but the ordeal is not
yet passed, they are left for a third, aye, a fourth, attack to sweep them
away. All this we have seen. In the case of the Foundling the mis-
chief originates in the popular prejudice, derived, we believe firmly with
M. Valleix, (like all other popular errors in medicine,) from a fallacious
doctrine originating with and propagated by professional *theorists.* In
the children's hospital, the mortality proceeds more directly from the
cold-blooded and calculating atrocity of the parents who procure the
admittance of their bastard offspring in the hope of being finally relieved
thereby of the burthen of its support. Both cases cry aloud for the inter-
ference of the legislature.

With respect to the affections themselves little need be said. The
" pustules" described by M. V. differ from the ecthyma infantile of
Willan, and indeed from all forms of pustule hitherto written upon.
Acute pemphigus he shows to be, when simple, a disease of extreme
levity; and makes it plain that the serious cases cited by various writers,
as examples of that malady, must really have been instances of some other
disorder, in the course of which the bullæ appeared as an intercurrent
affection.

Here we close our analysis of M. V.'s work. We have throughout
endeavoured to furnish the reader with a just notion of its contents, and
to aid in giving the diligence and sagacity of the author the publicity
they deserve. It remains for us to notice specially two of its most seri-
ous imperfections. Of these the limited number of cases is the most
important; the great rarity of some affections such as apoplexy explains,
it is true, while it excuses the paucity of adduced examples, but no such
plea can be urged in the instances of pneumonia and aphthæ. Secondly,
we are not distinctly told what a *new-born* infant is; to what age that
term is to be understood to apply. It is only by accident, as it were, and
at the 199th page the author acquaints us that to belong to that class the
infant must be under two months and a half old. Now there are cases
of infants who had passed that age reported in his book, and though the
introduction of these may be defended as illustrative of the change that
slight advance in age may induce in disease, yet it would, in our minds,
have been more natural and more useful to have given a more complete
series of cases occurring among the real subjects of his research.

In setting to work on a mere remnant of cases, and in not fixing the
age of the subjects to whom the results of his volume may in future be
applied, while he occasionally disfigures his pages with loose phraseology,
M. Valleix has lost sight of principles which, all will allow, lie at the root

of sound and useful research. He is therefore the less excusable for
assuming, as he does, a certain tone of conscious superiority, that seems
much too frequently to tell the reader " *mihi* summum rerum judicium
Dii dedêre, *vobis* obsequii gloria relicta est."

Notwithstanding these drawbacks, which it would be vain to palliate
or deny, we have no hesitation in pronouncing the work of such an order,
that from its appearance will be dated a new period in infantile
pathology.

Art. IV.

1. *Die Influenza. Ein historischer und ätiologischer Versuch.* Von
   Heinrich Schweich, Dr. der Med. und Chir.—*Berlin*, 1836.
   An historical and ætiological Essay on the Influenza. By Dr. H.
   Schweich.—*Berlin*, 1836. 8vo. pp. 188.

2. *Die Influenza oder Grippe, nach den Quellen historisch-pathologisch
   dargestellt. Eine von der medicinischen Facultät zu Berlin gekrönte
   Preisschrift.* Von Dr. Gottlieb Gluge.—*Minden*, 1837.
   *An historical and pathological Treatise on Influenza; being an Essay
   rewarded by a Prize by the Medical Faculty of Berlin.* By Dr.
   Gottlieb Gluge.—*Minden*, 1837. pp. 167.

3. *A Treatise on the Influenza of* 1837; *containing an Analysis of one
   hundred Cases observed at Birmingham, between the 1st of January
   and the 15th of February.* By Peyton Blakiston, m.d., Med. Lic.
   Cantab.—*London*, 1837. 8vo. pp. 60.

4. *Report upon the Influenza, or Epidemic Catarrh of the Winter
   1836-7.* By Robert J. N. Streeten, m.d. (*Transactions of the Pro-
   vincial Medical Association*, Vol. VI.)—*London*, 1838. 8vo. pp. 67.

The present period, when the attention of every medical practitioner in
the kingdom must have been called to the subject of influenza, during
the prevalence of an epidemic as general at least as ever was experienced
in these islands, seems favorable for introducing to the notice of our
readers an account of the history of this interesting disease. In order
that we may give the abridgment which we propose of the narratives of
Drs. Schweich and Gluge, unbroken by our own commentaries, we shall
previously introduce a brief notice of the epidemic with which we have
been so lately visited; chiefly that the reader may be able, whilst perus-
ing the histories of the German authors, to compare the different epide-
mics with that of 1837, as well as with those of 1830-33, described
especially by Dr. Schweich. In addition to the information derived
from our own observation of the late epidemic, we shall again refer to
the pamphlet of Dr. Blakiston, to which we made a short allusion in a
previous Number, and to the article in the Transactions of the Provin-
cial Association. The former treats simply of *facts* which have fallen
under the author's own notice, and conclusions apparently justified by
these. It leaves untouched the history of previous epidemics, and the
peculiarities (if any) of season in which the disease of 1837, or any pre-
vious epidemic, occurred. Like all the other works, it contains nothing

satisfactory on the pathology of the disease. For the consideration of the epidemic of 1837, the arrangement adopted in the Transactions is that which we shall follow. The materials of the paper contained therein consist of an analysis of replies, made by practitioners from all parts of the country, to a list of queries sent to them by the council of the Association. The information which has been thus collected is of considerable value, and is most ably reported by Dr. Streeten: but, in any future application of a similar kind which may be made, it will be desirable, as far as possible, to define the subject of enquiry. The reporter remarks on the uncertainty of some of the returns, from a want of such definition; to avoid which it would have been preferable to obtain a description of the symptoms and other attendant circumstances which were regarded by the respondent as constituting influenza, and as distinguishing it from ordinary catarrh, or from any other disease to which it may be nearly allied. A circumstance of another kind must also be taken into consideration, in estimating the value of collations of this description; and that is, that the replies are made by practitioners whose employment is among very different classes of society; and it would be an invidious (although a necessary) question, Is your experience chiefly among the poor or among the rich? And, unless the replies are obtained from all the practitioners in any one place,—such, for instance, as a large town,—the mortality and some other circumstances cannot be well estimated. Again, although it is to be inferred that the majority of the replies are made from personal knowledge, still what is the limit between those thence derived and those which are from hearsay alone? How is a mind, not unfairly sceptical, to rest satisfied with the sort of evidence which is contained in " It would be difficult to point out a person who had not the disease;" and is one hundredth or one thousandth of the material of that statement the result of personal experience? This is certainly selecting an extreme case, but it is not an unfair illustration.

Circumstances of this kind, together with others which will strike any one reading reports similar to that in the Transactions, should be attended to, and made allowance for: but, with all this allowance, the report is very valuable, and we shall now proceed to its analysis.

Concerning *the time at which the influenza appeared*, the replies vary from the third week in November to the last week in January; but it is generally agreed that the period of its greatest prevalence was from the middle of January to the end of the first week in February. The accompanying table renders it evident that no conclusion can be drawn from the accounts which have been communicated to the Association, as to there having been any regular progression of the disease from one part of the kingdom to another.

DISTRICT.	COMMENCEMENT.	TERMINATION.
Northern	November; middle of January.	February 8; April.
Midland	November; January 16.	Middle of February; May 1.
Western	End of December; February 2.	February; beginning of April.
Southern	Middle December; midd. January.	Middle of February; May.
Eastern	End December; beginning January.	Beginning February; midd. March.

It will thus be seen that an extended range has been given to the whole epidemic; owing, probably, to its reappearance in the months of March and April.

An affirmative reply is almost universal to the query, *Did it attack a great many individuals at the same time?* Some, however, as Dr. Shapter at Exeter, and Mr. Maul at Southampton, refer to sporadic cases preceding the general attack.

The opinions are not uniform as to the *age, sex, and temperament particularly attacked by the disease.* More than half the replies, it is stated, speak of the indiscriminate character of its attack; but some, although in various degrees, except young children from liability to the disease. Mr. Prichard, of Leamington, gives the following statement of the ages in 170 cases occurring in his practice.

Under 14 years . . . 26 cases; about one sixth.
Between 14 and 65 . . 119 } 144; about five sixths.
Above 65 . . . . . 25 }

The Chichester Report, which contains the result of the experience of all the medical men in the city, says, " In regard to age, it seems to have almost equally attacked young and old. Of cases recorded, the greater number appears to be at the periods under ten and from thirty to forty; but the difference in the intermediate decades was trifling, and the uniformly decreasing numbers beyond forty would probably about tally with the small population of those ages." The following is a table of Dr. Blakiston's cases, relating as well to sex as to age.

	Males.	Females.	Total.
Between 1 and 5 years . .	2	1	3
,, 5 and 10	2	0	2
,, 10 and 20	5	7	12
,, 20 and 30	8	15	23
,, 30 and 40	13	8	21
,, 40 and 50	6	13	19
,, 50 and 60	9	3	12
,, 60 and 70	3	4	7
,, 70 and 80	0	0	0
,, 80 and 90	1	0	1
Total . . .	49	51	100

Sex and temperament do not appear to have influenced the liability to attacks of influenza: but, whatever may be the fact as to the liability of children to the disease, three fourths of the accounts speak of its having been milder in childhood than at more advanced periods of life; although the age of childhood was not without its severe attacks. In our own practice, several children died of pneumonia produced by influenza; but they were greatly predisposed to the disease, and previously out of health. That *the aged suffered the most from the disease* is an almost universal opinion. In reply to the query, *What age suffered the most?* Dr. Hastings says,

"From sixty upwards. I answer this question most unhesitatingly. Under the age of sixty, persons, male as well as female, required, many of them, but slight attention to get safely, and in a few days, through the malady; but all of those, indiscriminately, male and female, who were so far advanced as sixty, suffered most severely, and had a long and dangerous illness, being confined to bed with cough and copious expectoration for some time. Of twelve persons above the age of sixty attacked, all were in bed for a week, all suffered most severely from profuse muco-purulent expectoration, all became considerably emaciated; eight were in bed for a fortnight

and had a dry tongue, with small feeble pulse; four were in bed for a month, all the time so critically ill that I scarcely expected them to live from day to day; and two died within nine days of the attack. The four old persons who were in bed a month, have not yet [July?] quite recovered, and neither of them left the house till the month of June. Among the persons attacked below sixty, although in number thirteen times more than those above that age, I had comparatively few that were in bed a week; and those were persons who had been previously ill, either with pulmonary or other complaints." (p. 513.)

The testimony is general as to the *extensive diffusion of the disease*.

The replies to the question of the *proportion of deaths to the numbers attacked* are very indefinite. As far as an average can be made, it would appear to be about 2.3 per cent. On this subject we must refer to what we have already said of the great uncertainty of any attempts at very accurate numerical proportions. Next to *old age*, and in Dr. Blakiston's practice, the influenza " only proved fatal in those cases where the persons whom it attacked had been enfeebled by old age or chronic disease." Disease of the pulmonary organs (especially bronchitis and asthma) is mentioned as most frequently predisposing to a fatal termination of the disease. Dr. Shapter observes, that "the circumstances which particularly predisposed to a fatal termination were, amongst children, hooping-cough, and the recently having had some of the infantile eruptive diseases, which prevailed very much during the preceding November and December: amongst the more advanced in life, pectoral weaknesses generally, but more especially asthma:" and the comparative frequency of such affections in old age probably explains the greater fatality of the disease at that period. Dr. Brown remarks, " Besides the time of life, old age, and infancy already mentioned, chronic thoracic disease, or peculiar proneness to such disease, predisposed the patients to a fatal termination. Of the aged persons who died, in almost all there was some previously existing disease, generally chronic bronchitis, affection of the heart, or both conjointly." It appears that free livers were in some instances rapidly carried off.

The duration of the disease appears to have been very uncertain. Dr. Streeten, from a careful consideration of the replies, thinks that the disease may be divided into an acute stage, lasting generally from two to four or five days, the disease frequently terminating altogether at the end of that period; and a second, or more chronic stage, in which the symptoms continued in a slighter form for a period varying from five to ten days, or even a fortnight more: and many, after this, were affected with a state of general debility for an indefinite period. *Relapses* are said by some to have been frequent; by others, the opposite is stated; and this discrepancy attends accounts from the same locality,—e. g. Liverpool.

It does not appear that *individuals exposed to changes of weather in the open air were more liable to the disease than those confined chiefly to the house*. Some assert that the former appeared less liable; and the exceptions to this statement are few. From our own experience, we should say that, although, in innumerable instances, persons shut up in their houses suffered from the disease, yet we think that persons exposed to the ordinary exciting causes of catarrh were by far the most liable. For this reason, the servants in families were more frequently attacked

than the members of families. Many individuals confined to their rooms escaped, whilst most of the other inmates of the house were attacked.

It is an almost universal opinion that the disease is not *contagious*. Mr. Maul states a fact, without however drawing any conclusion from it, (which is the only fact at all important on the opposite side,) that " if an individual come from a distance with the disease, the inhabitants of the house in which he arrived were usually attacked." The aggravation of pulmonary disease which existed at the time of an attack of influenza seems, with few exceptions, to have followed the disappearance of the latter; and this appears to be especially applicable to phthisis: and Dr. Hastings observes, " I may also remark that this is not confined to pectoral complaints. I find muco-gastritis and muco-enteritis of long standing referred in its commencement by patients to the influenza." Dr. Blakiston has detailed a case of phthisis, in which the disease did not appear to be at all worsened by the concurrence of the influenza. There is a statement also made by Mr. Welchman, of Kineton, to the same effect; but this and one or two similar statements can but be regarded as exceptions.

To the following queries the replies are doubtful, or none at all; indeed, there is no satisfactory evidence on the subject: *Were there any circumstances that appeared to exempt individuals from an attack of the disease? and, in particular, did the having been attacked during the last similar epidemic of the year* 1834 *appear to afford any protection?*

After a careful examination of the *symptoms* described as belonging to the disease by all the respondents, the reporters think that no very appreciable variation existed in its general features in the different localities. The symptoms are divided into febrile and those more immediately characteristic of the epidemic. The febrile symptoms, which it is needless to specify, sometimes commenced with actual rigor, the peculiar symptoms of the disorder showing themselves when the febrile state became fully developed: they were usually mild, less frequently more severe, sometimes typhoid. Very commonly the pains in the back and loins were more than belonged to the febrile state, and should rather be classed as symptoms of the epidemic. The catarrhal symptoms were very various in degree, from the mildest to the most violent: " the sense of weight and frontal headach were very prominently marked, being recorded in almost all the returns." Occasional lancinating pains over the eyebrows, of short duration, were among the early symptoms. The pain sometimes extended all over the head. There appears to have been a peculiarity in the violence of this headach. Soreness and rawness of the fauces were occasional, with " redness and tenderness" mentioned in the Chichester Report. Tightness and constriction of the chest were frequent, with more or less soreness beneath the sternum; but the symptom to which the greatest prominence is given is the cough, " which is variously described as being short and harassing,—troublesome and frequent,—preventing sleep,—very distressing, from its aggravating the pain in the head; sometimes as severe, violent, or coming on in frequent paroxysms of long duration. Some patients coughed little in the day, but much in the night; and in all cases, in some parts, there appeared to be a marked increase of cough, as of other symptoms, in the evening. Hæmoptysis is mentioned as having occurred with this cough

to an alarming extent. " The expectoration is by no means so generally noticed; but, when it is mentioned, it is stated to have been scanty, difficult, and consisting of clear viscid mucus at the commencement, afterwards becoming more copious and free, opaque, and muco-purulent in its character, and occasionally tinged with blood. In some cases it is described as excessive and profuse." Among the aged patients who recovered there was often, for a time, a cough of a peculiar character, occurring in several in severe and prolonged paroxysms, terminating in scanty expectoration: in these cases there was no sonorous or constant mucous rhonchus.

The respiration was "in some cases short and hurried, or uneasy and oppressed, in others difficult. Pains in the chest are mentioned in some of the returns, in addition to the soreness under the sternum; and in one these pains are described as having been acute and lancinating. Examination by the stethoscope, according to Dr. Shapter, revealed the existence of sonorous and sibilous râles, and, for the most part, also a well-marked crepitation, in some part of the thorax, generally the lower portion." But Dr. Blakiston states that, " in seventy-five cases, no râle whatever was heard;" and on this point he gives the following table:

No râles, in	.	.	.	.	.	75 cases.
Sibilous and sonorous râles alone, in					5	
Sibilous, sonorous, and mucous, in			.		14	
Sibilous, sonorous, and subcrepitant, in				2		
Mucous gurgling alone, in			.		3	
Crepitant râle, in		.	.	.	1	

<div align="right">100</div>

In many cases, even of moderate severity, there seemed a contradiction between the pectoral sound of the presence of sputa and its actual expectoration: whilst standing by the patient, one expected every minute to find the loose-sounding cough effect the discharge of the mucus; but none came.

The *circulation* was rather depressed than excited; the pulse, although quick, being small and feeble; and in only two instances being mentioned as full and soft.

The symptoms indicating derangement of the *digestive organs* were pain, tenderness, tension of the epigastrium and abdomen; anorexia; thirst, never very urgent; nausea; vomiting; furred tongue, sometimes becoming brown and dry, sometimes throughout the disease having looked as if covered with a layer of white paint. Dr. Barlow remarked that, when the chest-affection was trifling, the special irritation of the epidemic appeared to be seated in the stomach and bowels. The bowels were sometimes constipated, at others relaxed. Diarrhœa was occasionally observed; but the mucous membrane of the large intestine seemed to be much more rarely affected than those of the pharynx, trachea, and bronchi. In seventy of Dr. Blakiston's cases they were constipated. In Chichester, diarrhœa had prevailed before the occurrence of influenza. The urine was generally scanty and high-coloured; rarely abundant and limpid; sometimes becoming thick or whey-like, and depositing a copious sediment.

The symptoms ascribable to the *brain, spinal marrow, and nervous system* were great prostration, pains in the back and loins, and various

neuralgic affections, sometimes very intense. These severe pains in the back, lumbar and sacral regions, were felt, in some places, in almost every case; the pain sometimes descending along the thighs and legs, sometimes shooting across under the scapulæ, and running along and around the arms. Violent pains in the eyeball and in the ears, or one ear, were among the neuralgic pains. Examples likewise occurred of severe spasms in the limbs, attended with a sinking pulse and Hippocratic face; and spasms of the muscles of the trunk were not uncommon in some parts. The peculiar prostration reminded one patient, who had had cholera in India, of what he suffered on recovering from it: indeed, it appears sometimes to have approached to the collapse of cholera. Dr. Davis, of Presteign, remarks, "that the *prostration of strength was instant and universal*, and attended with *extreme depression of spirits, and, in a vast majority of cases, spontaneous diarrhœa*:" and a peculiarity in this prostration was the length of time which the patient continued to labour under it, after the cessation of the other symptoms of the disease.

We have thus sketched the common symptoms of the epidemic, which were liable to varieties of intensity and combination, as is the case with other epidemic diseases. Certain *unusual symptoms* occurred in the practice of different individuals. Dr. Brown mentions the occurrence of three fatal cases of meningitis, in adults; and Dr. Hastings likewise mentions one such case which recovered. Acute pain in the head, relieved, after a week's duration, by a discharge of pus from the ear; abscesses of the ear; delirium; apoplexy; sudden insensibility of one or two hours' duration; convulsive attacks; syncope and intermitting pulse; excessive pains in the abdomen, usually midway between the umbilicus and symphysis pubis, sometimes with constipation, sometimes with mucous and sanguinolent stools; pain in the pubic region, and retention of urine; various neuralgic pains; soreness of the lips, mouth, and fauces, of unusual severity;—are among the less frequent symptoms which accompanied the epidemic in different parts.

The experience of medical men with regard to the *Treatment of the Influenza* of 1837 cannot be regarded as very satisfactory. The main characteristic of the treatment mentioned in the replies appears to have been the cautious employment of evacuants generally; the use of diaphoretics and mild aperients in the first stage, with diluents, regulated temperature, restricted diet, and a cessation from all active pursuits. In severe cases, occasional local bleedings and counter-irritants to the throat or chest, with confinement to bed, were added. In the second stage, expectorant and anodyne medicines, with sulphate of quinine or mild tonics where there was much debility, are most commonly recommended. In the relapses, a more active treatment, with the freer use of evacuant remedies, (especially when inflammation attacked any organ,) was employed. General bleeding appears to have been very rarely employed, and is often spoken of as injurious. The almost unanimous statement is, that venesection was not employed except in acute inflammation of the pulmonary organs. In these cases our own experience is in favour of bleeding: the blood which was drawn presented the usual buffy coat. The Chichester Report, when speaking of the evil effects of general bleeding, says, "It is right to state that a very small quantity of blood, drawn from the schneiderian membrane, relieved the distressing headach

in a marked manner: even a few drops accidentally flowing in two cases gave marked relief." Local bleeding is more recommended than general, though rarely to any extent. Various counter-irritants are well spoken of, especially in old people, to the chest and other parts requiring their use. Emetics are recommended by some practitioners, early in the disease. On this subject Dr. Blakiston says, "When the tongue was covered with a thick, soft fur, and when much nausea and vomiting were present, a brisk emetic produced a great amendment." Various expectorants and anodynes were used. Opinions varied as to the propriety of the latter. On this point Dr. Barlow says, "Some practitioners withheld opium and had protracted disease, as I had occasion to witness. There being no counter-indications, I combined it throughout, and with decided advantage." The exhibition of tonics and stimulants is also a point of practice on which some diversity of opinion existed. Much mischief appears to have arisen from their indiscriminate use in an early stage of the disease, in accordance with recommendations of the public press. Quinine is said by some to have been useful during the debility which attended convalescence. Mr. Myles says, that in old people, when the cough was a prominent symptom, he found a blister to the chest, with the sulphate of quinine internally, to act as a specific in all the cases he attended. Mercury and antimony were used, and not only as cathartics and diaphoretics, either alone or combined. Dr. Baird's practice was to administer three grains of calomel, with one grain of tartarized antimony, twice, thrice, or even four times in the twenty-four hours. "The effect of this powder," he says, "was to produce extreme nausea for the space of an hour, and frequent vomiting; to cause a vast discharge of purulent-looking matter from the lungs, excite a copious diaphoresis, and procure several dark pitchy evacuations from the bowels. So soon as the mouth became slightly affected by the calomel, (and in many instances before this was apparent,) the cough and expectoration had been greatly diminished, the restlessness had ceased, the countenance and eyes had assumed a more natural expression, the tongue had begun to clean at the edges, and the pulse restored to its natural state." A light, diluent, or farinaceous diet is generally recommended; though, from some of the returns, one rather more nutritious seems to have been occasionally found necessary. But the diet, like the treatment, was properly regulated by the symptoms in individual instances; not (as was too often the case with both) according to preconceived notions of the nature of the epidemic. In strictly inflammatory cases, the antiphlogistic regimen was requisite in all its forms; but, in the more general form of the malady, frequent mild nutriment, where it could be taken, was very beneficial. Much mischief was done by routine practitioners, haunted by fear of debility and typhus, enforcing a diet of animal food and strong drinks. Certain communications in newspapers and medical journals must have led to very injurious consequences in this respect. Dr. Blakiston speaks with commendation of the etherial tincture of lobelia in the states of congestion or inflammation of the bronchial mucous membrane attending the disease. According to our own experience, the simple saline medicine, or the liquor ammoniæ acetatis diluted with water, with a few drops of antimonial wine, were as generally beneficial, in ordinary cases, as any thing.

We pass over, for the present, the various accounts of atmospheric phenomena, and some interesting meteorological observations by Mr. William Addison, contenting ourselves with the conclusion at which he has arrived, "that it must be evident that the exciting cause of influenza cannot be found in sudden vicissitudes of temperature, great heat or cold, damp weather or melting snow; however much all or any of these circumstances may predispose to or originate the more ordinary catarrhs, eruptive fevers, and other disorders of spring, autumn, and winter." Dr. Gluge has on this point alluded to a remark of Sydenham, "that, after a sufficient observation of the weather during many years, he found every kind of weather accompany every kind of epidemic;" and Dr. G. adds, that he " has arrived at the same result after having examined the various authors who have mentioned the condition of the weather in the various epidemics of influenza." Dr. Schweich has endeavoured (with what success we shall hereafter see) to attribute the occurrence of influenza to other causes.

Before we notice the history of the disease contained in the works of the German authors, we will abridge a notice made by Dr. Gluge, at the end of his volume, on a pathological appearance said to have been observed in the fatal cases of pneumonia connected with influenza. Dr. Gluge states that he has seen the appearance himself. He alludes, as a standard of comparison, to the false membrane of croup, and to similar exudations which have taken place in the bronchial tubes; and says that in the above cases a similar appearance existed in the lungs. In all these cases there are found, in the hepatized portions of the lung, white, elastic, firm cylinders, occupying the bronchia, which may be sometimes followed from the fourth or fifth subdivisions of these tubes, into such as have not more than one quarter of a line of diameter. By some care, Dr. Gluge could detach this substance, resembling in arrangement the bronchial ramifications. The inner membrane of the bronchia is extremely reddened, but not softened ; and the formation of these cylinders, as well as the redness of the bronchia, is absent in the healthy parts of the same lung. Dr. Gluge has never met with a similar appearance in hepatized lung unassociated with influenza; but he merely mentions the above as a fact, without connecting any hypothesis with it.

Attempts have been made to date the existence of influenza at a very remote period. Dr. Most has extracted from the writings of Hippocrates an account of a disease which he regarded as influenza, but which differed from it in several important particulars. Some epidemic catarrhs which prevailed in the fourteenth and fifteenth centuries are recorded, but these can scarcely be regarded as influenza, of the existence of which we have no credible accounts previous to the tenth century. Such is the opinion of Dr. Schweich; and the instances brought forward by Dr. Gluge of the earlier existence of this epidemic are not satisfactory. Since the sixteenth century it has frequently recurred, and the extent of country over which it has passed, as well as the large number of individuals whom it has affected, has afforded ample opportunity for local descriptions of the disease, of which medical authors have considerably availed themselves. It is from these sources that Drs. Schweich and Gluge have collected the materials for their essays.

The plan which the former has adopted has been, after some general

considerations of the subject, to describe the influenza as it occurred in 1831-33; and then to notice, in their regular series, its previous attacks; comparing the characteristics which distinguish each with the epidemic which was first of all described. Dr. Gluge has commenced his essay by a short critique on the writings of various authors on influenza, in which he finds fault with Dr. Schweich, partly for incorrectness, partly for not having extracted as much valuable information as he might have obtained from English authors, and partly for certain fancies in which Dr. Schweich has indulged himself and amused his readers, respecting the causes of influenza, to which we shall allude hereafter. After a general description of the disease, a consideration of the causes to which it has been ascribed, its geographical extension, he also considers in detail all the instances of epidemics of influenza which are on record. He appears to have omitted the examination of no work in which information might be obtained: at least, if we may judge from the annexed Bibliography of Influenza.

We shall follow the arrangement of Dr. Schweich in what follows, which will be solely analytical.

Our authors are at issue respecting the course which has been taken by epidemics of influenza. Dr. Schweich says that this course has varied according to the situations in which the disease originated; that this origin has been most frequently in the north, whence the disease has extended in a south-westerly direction; that it has less frequently passed from south to north, or from north-east to north-west, and never from west to east or from north to south. One instance of the disease is recorded which commenced in various places, and followed different directions.

Dr. Gluge on this subject says, that we observe, in the history of influenza, until the end of the sixteenth century, that its course was always from west to east; but that, since the sixteenth century, all the epidemics have taken the opposite direction, from east to west. If the above statement is to be understood literally, Dr. Gluge is certainly in error, especially with respect to the former part; for the epidemics previous to the sixteenth century, as quoted by Dr. Gluge, are no evidence of progression from west to east; a direction which, we are disposed to think, with Dr. Schweich, is never taken by influenza. Thus, in Dr. Gluge's own table, it is evident that he knows nothing of the course of the epidemic of 1387, although he has quoted it as passing from west to east; the only place at which he mentions that it occurred being Florence. And again, with regard to the epidemic of 1557: Sicily, Nismes, Holland, the places at which the disease is mentioned as having progressively appeared, cannot be instanced as any proof of progression from west to east. Similar objections apply to the epidemics of 1580 and 1593. Indeed, it is difficult to see what motive Dr. Gluge could have had for making so very absurd a table. We are, on the whole, disposed to think that Dr. Schweich is correct in the directions which he has ascribed to the epidemic; although, of the diseases happening at an early period, the proof is very unsatisfactory indeed.

The different epidemics, says Dr. Schweich, have always been preceded, accompanied, or followed by certain cosmic phenomena,—such as comets, northern lights meteoric stones, peculiar fogs, earthquakes,

volcanic eruptions, floods, remarkable changes in the weather, and by generally disturbed vegetation, and contagious diseases among men and animals. As a general law, in which Dr. Gluge does not agree, any more than he does with the foregoing assertion, Dr. Schweich states that the extent of every epidemic of influenza has an inverse ratio to its intensity. Where few individuals are affected, those few suffer more from the disease; when its occurrence is sudden and general, it is very mild. Between the years 1830 and 1834, the influenza twice traversed Europe. The latter epidemic attracted the notice of medical writers more than the former, both on account of its speedy recurrence and because the cholera, which had diverted their attention from the previous epidemic, had then ceased. The chief difference between the two epidemics consisted in the greater intensity of the disease of 1830-32, compared with the greater extent of its successor. In Europe, the former commenced in the east; but it had previously existed in Australia. It appears probable that the two epidemics of this year had an independent existence, and followed a course irrespective of each other. In the northern hemisphere, it was first noticed at Moscow; whence, in eight months, it extended to St. Petersburgh, Warsaw, Frankfort, Paris, London: three months subsequently it appeared in Italy, and shortly afterwards in Gibraltar. It passed with equal rapidity to America, which it reached in 1832, about fifteen months after its commencement. It recurred in 1833, originated in the north-east, and passed over Europe. It is uncertain whether the previous disease had traversed America, passed round the globe, and reappeared in Russia; then giving rise to the appearance of a second epidemic. There was but a few days' interval between its appearance in St. Petersburgh, Moscow, Odessa, Alexandria, and Paris. Gluge describes them as two distinct epidemics; quoting Radius as an authority for the latter "having appeared in a very different form, the catarrhal symptoms having often been inconsiderable; the symptoms frequently consisting only in faintness or trifling rigor, with feverish heat, disposition to perspiration, a heavy pain over the eyes, nausea, and diarrhœa; but that prostration was always present." These symptoms cannot be regarded as constituting any material difference, particularly as Dr. Gluge does not say on what extent of observation the above remarks are founded.

Among the numerous terms which have been applied to the disease, Dr. Schweich prefers either "epidemic nervous catarrh, or nervous catarrhal fever;" the essential characteristics of the epidemic being nervous and catarrhal, which are more or less evident in its different stages. He describes the disease as having consisted of four stages: 1, premonitory, or of derangement of general sensation; 2, stage of increase, or of nervous congestion; 3, stage of decrease, or of general effort at secretion; 4, of universal loss of power, with commencing convalescence or approaching death. Neither in its separate stages nor in the disease as a whole was there any definite duration. The signs of the first stage were those of derangement of general sensation, connected with universal debility. In addition to these, in the second stage, there occurred transitory aching pains in various parts of the body, with catarrhal congestions in most of the mucous membranes; sometimes of greater violence in those of the chest than in those of the abdomen. These were distinguished

by their usual symptoms. In the cases of children, observed by Dr. Schweich, there was an itching sensation in the larynx, accompanied in many instances with croupy respiration. The skin was always dry, its temperature commonly elevated, but occasionally depressed. A remittent fever almost always accompanied the disease, with evening exacerbations. This was sometimes very slight. The expression of the face was that of intoxication. The disease manifested itself in three principal forms: 1, a nervous catarrhal; 2, a nervous synochal; 3, a simply nervous: the last being by far the most frequent, the second the most uncommon. In the first the pains were slight, the mucous membranes much affected, and the character of the fever torpid. In the second the symptoms were more marked; the pains considerable, and accompanied with spasms; nausea and vomiting took place; there was much determination of blood to the head, and symptoms which induced a belief of the existence of inflammation, the treatment of which by bleeding produced injurious effects. The blood, when drawn, separated into a soft coagulum and turbid serum; faintness being readily produced. The weakness in this form was more than in the others. The third form was the slightest and most frequent: from its slightness its existence might be overlooked. It was marked by derangement of the general sensation; slight alteration of the face and voice; trifling cough; some anorexia, and other unimportant symptoms. The peculiarity of this form was, that it continued during eight or ten days; when, towards evening, a fever appeared, which, if well managed, put an end to the disease. The continuance of the second stage was, in the first form, very short; never extended beyond two days in the second, and was undefinable in the third. The third stage was marked by general efforts at secretion, and the secretions were evidently of a critical character; as was shown by the improvement of the symptoms. The skin became moist, and sometimes covered with sweat; sudamina and other cutaneous eruptions, such as scarlatina and measles, occurred; the parotid glands occasionally enlarged; free secretions occurred from the whole mucous membranes of the alimentary canal, the frontal sinuses, nostrils, and bronchia. Epistaxis likewise took place. The urine became more abundant; and, after a duration of three or four days, these symptoms, together with the fever, mostly disappeared. The fourth stage was marked by a continuance of debility after the previous symptoms had all ceased; and this continued for some time before convalescence was quite established. The course of the disease was modified by other circumstances. In the phlegmatic temperament it was more slow, in the inflammatory diathesis more acute, and in individual constitutions modified by idiosyncrasy. In children there were frequent congestions to various organs, in such a degree as to simulate inflammations. In the north, the organs of the chest were more affected, and the fever possessed more of the synochal character; in the south, the nervous symptoms predominated. The debility of old age was most universally an unfavorable circumstance. The early fatal terminations of influenza were the consequence of injury of the lungs, apoplexy, marasmus senilis; but death occurred at a subsequent period in consequence of the development of phthisis, an effect of the disease. In some places—e. g. Berlin—the mortality, during the influenza, and for some time afterwards, exceeded the number of births. Those who

suffered from chronic pulmonary complaints, and who were weakened by age, were cut off in the greatest numbers. Several instances of abortion and of premature delivery are recorded as having been produced by it.

Under the use of diaphoretics and a regulated diet, the disease was generally mild in its course, and sometimes terminated critically, without the development of the second stage. Emetics were very useful, when employed early. Antiphlogistics with narcotics relieved the pains and cough. Clysters were preferable to purgatives, given in the ordinary way. Purgatives and bleedings are almost universally admitted to have been injurious, although cases sometimes occurred which required their employment. The early use of stimulants was often found very prejudicial. The duration of the disease was from four to twenty days; but there was liability to relapse. The influenza, says Dr. Schweich, is distinguished from sporadic catarrh, as well as from the epidemic catarrhal fever which often occurs in spring and autumn, by the great debility, the disturbance of the general sensation, spasmodic pains, nausea, and vomiting, the great disposition to sweating and the occasional occurrence of exanthema; by its danger to old people, the peculiar expression of the face; but, above all, by its great epidemic extent. Its prognosis may be inferred from what has been already said.

Before we proceed to the early history of the disease, we shall extract from Dr. Gluge's work, his " description of the epidemic, generally, derived from the most trustworthy sources :"—Prostration and weariness to such a degree that the strongest constitutions are frequently rendered powerless; frequently, great sensibility to any chillings accompanying the whole disease; great discomfort, anxiety, and weariness of self and everybody besides; fixed tense pain of the head, mostly in the forehead and over the eyes, frequently increasing to giddiness; nights sleepless, either with delirium or lethargy. Together with these, have been observed disordered sensations, such as a sensation of coldness about the sagittal suture, and of a ball rising in the throat. The senses of sight and of taste were more often affected than the other senses. The organs of locomotion generally suffered: the muscles of the head, neck, back, and shoulders being painfully affected, the sensations in the extremities being sometimes as if the limbs were broken or dislocated. The thorax felt as if contracted and confined by an iron band. Anxiety and pain in the præcordia and stitch in the lumbar regions were complained of. When fever existed, it was commonly mild, with evening exacerbation. The pulse seldom rose to 120, was soft, small, always weak but seldom hard, when the fever was attended with inflammatory phenomena. Breathing was mostly short, anxious, sometimes attended with noises from accumulated mucus in the trachea. Bronchitis and pneumonia occurred. The nostrils were stopped up, and from them escaped a corroding fluid, sometimes mixed with blood, and producing relief. The face was swollen, often red as in erysipelas; eyes injected and filled with tears: the parotid and other glands were not unfrequently swelled. Hoarseness or loss of voice frequent. The inflammatory state of the respiratory organs produced a troublesome cough, greatly increasing the headach, accompanied with a thick, yellow expectoration; and this, most troublesome at night, was the most obstinate phenomenon of the disease. Sores occurred at the corners of the mouth: the tongue was covered, as it were, with white

or yellowish cream.   Thirst was rarely considerable.   Anorexia, a desire
for acids, eructations and vomiting, diarrhœa, were other symptoms: but
constipation was more frequent than diarrhœa.   The urine was clear,
watery, or reddish, frequently turbid, sometimes having a sour smell,
rarely normal, sometimes having a sediment, at others being only a little
cloudy.   The skin was dry, (sometimes having spots of purpura,) but
after the first access of fever, sweat appeared on the whole surface, some-
times very excessive, and of days' duration.

If we look at the disease, says Dr. Gluge, as an epidemic, its charac-
teristics are : the suddenness of its appearance in countries and among
individuals; its regular advance; the fact of thousands being simulta-
neously attacked by it, the rapid development of its symptoms, the faci-
lity of relapse, and the obstinate and disproportionate debility which
attend it.

Dr. Gluge has mentioned epidemics of influenza, in the years 1323,
1327, 1337, 1403, 1411, 1414, 1427 ; whilst Dr. Schweich says, that the
earliest epidemic, which can properly be characterized as influenza,
occurred in the year 1510 : and certainly, if the definition of influenza is
to be taken from either of these authors, there is in Dr. Gluge's book but
very scanty proof of any epidemic of the disease prior to 1510.   The
epidemic of this year originated in the East and extended to Italy, France,
and Spain.   The righteous zeal of the court of Pope Gregory XIII. attri-
buted its occurrence in France to a divine retribution, accorded to Louis
XII. for his resistance to the power which so liberally " dealt damnation
round the land ;" but we are not told of the delinquency which subjected
his holiness to a similar visitation.   The disease was distinguished from
that of 1830-34 by constant inflammatory fever, delirium, and subsultus
tendinum, and it was very fatal from bad treatment.   In Italy it was
termed *coquelucha ;* in France, *cephalite* and *coqueluche.*   Early in the
spring of 1557, measles, small-pox, and purpura prevailed among the
children of Padua.   During their continuance, in the following
September, an epidemic cough, with violent pains in the head, suddenly
occurred.   It is described by Most, as having extended over the whole
globe.   Its general character was mild : but it was extremely fatal in
Holland.   Riverius states that a fetid sweat was a critical sign.   Forest,
speaking of this influenza, first mentions its influence in producing abor-
tion " so that, within eight days, sixteen women died."   Pains in the
loins were so frequent, that few could walk.

The epidemic of 1580 originated in Africa, taking thence a north-
westerly course, and branching off, as universally happened, in various
directions; it eventually extended over the whole of Europe.   The fever
frequently assumed a putrid form, and the disease has consequently been
described by some, rather as a putrid fever, than as a catarrh.   Bleeding
slayed its thousands, although some persisted in its unconditional recom-
mendation.   Its origin, course, and the putrid character of its fever
chiefly distinguish it from the epidemics of 1830-34.   Dr. Gluge gives
an account of two somewhat doubtful epidemics of influenza in 1593 and
1626, to which Dr. Schweich does not allude.   The influenza of 1658
was limited to a small part of England, and has been scarcely mentioned,
except by Willis, as it occurred in Oxford and its vicinity.   Dr. Gluge
thinks that Dr. Schweich is wrong in thus limiting it; and quotes for this

opinion a letter of Timæus, in which the disease is compared to its predecessor in 1580. Under entirely different conditions of weather, an influenza appeared in Germany and Switzerland, which showed itself in Hungary and France in September, 1675; it did not appear in England, until nine months after its commencement in Germany. Its distinctions were, very acute affections of the chest,—pleurisy and pneumonia being in England its frequent accompaniment; the abdominal organ remained unaffected, and there was no perceptible sweating.

There was a catarrhal epidemic (not alluded to by Dr. Schweich,) in 1693, which existed in England, France, and Holland.

Differing in many circumstances from that of 1830-34 was the influeaza of 1708-9. It was preceded by plague in many parts of Europe, and appeared first in Italy. Its course was from south to north. It was very violent and proportionally limited in its extent; the abdomen was rarely affected, and the crises were, not through the mucous membranes, but through the skin, manifested by acute cutaneous eruptions. In Italy, jaundice was critical. Dr. Gluge does not think that this was an attack of influenza, but he does not say what it was; certainly an unusual class of symptoms attended the disease.

An epidemic of influenza, extending from the north to the south-west, occurred in 1712. It varied from the disease of 1830-34 chiefly in a minor geographical extent, although great numbers were affected by it, in those places where it existed. In 1729-30, the influenza occurred with most unusual violence, and its fever was so inflammatory that Hoffmann termed it " febris synocho-catarrhalis." It probably originated in Russia, passed through the whole of Europe, and visited America. It appears to have spared nobody; but its fatality has been differently described by different authors. In London it was exceedingly fatal, and its character was the worst in England, Germany, France, and Spain. The unfavorable terminations of the disease were phthisis, hydrothorax, and anasarca. Its chief distinctions appear to have been, its inflammatory character, and the tendency to the formation of exanthemata. The disease was sometimes followed by a continued fever; and a double tertian occasionally occurred where the bilious symptoms were manifested. So many were ill of it in Moscow, that, says Dr. Gluge, " there were twenty patients in many houses; in Rome, there were 60,000 affected with it, and eighty physicians; in Milan 50,000; in Vienna 60,000; in London scarcely 100 remained free; and in Paris there were not priests enough unaffected to conduct the services of the church." We quote this, not because we have the least faith in the details, but because they are circumstantial evidence of the extent of the disease.

The influenza of 1731-35 (described by Gluge as of 1732-33) was preceded in England by a similar disease among horses. It broke out in Connecticut, and extended thence very rapidly to Massachusets and Newfoundland. About the middle of November, 1731, it appeared in Russia and Saxony, but no accounts exist of it from that time to the summer of 1732, when it is again spoken of as existing in Germany. The first place in which it appeared in Britain was Edinburgh, during September of the same year. In January, 1733, it appeared in Belgium, Italy, Paris, and Switzerland. In February, it wandered through Scotland and Spain, and by the end of the month, had spread all over

England and Ireland. It passed over to North America and took a southerly course as far as Mexico and Peru. The disease was distinguished by some peculiarities. Cynanche, pleurisy, and pneumonia, were frequent in Italy, and the symptoms of weakness were relieved by a spontaneous bilious diarrhœa. Extremely violent pain in the head was the precursor of death. The disease most usually terminated by secretions which occurred on the third, fifth, seventh, or fourteenth day. There was expectoration of fluid blood, followed by bad consequences. Asthma and dropsy sometimes succeeded it in females. There were occasionally swellings of the parotids, gums, and testicles. Ulcerated throat occurred in Belgium. The gastric affections were inconsiderable. Cutaneous eruptions and inflammation of the lungs were noticed in Germany, and a state of stupor, with subsultus tendinum and convulsions, sometimes preceded death. The appearance of cutaneous eruptions, such as urticaria, miliaria, and petechiæ, seemed in no way to increase the danger of the disease. The blood which was drawn is described as forming a thick, liver-like coagulum, from which no serum separated itself. In England and France, the disease was followed by an epidemic dysentery. Respecting its extent, Huxham says, " omnes pervasit domos, pauperum tabernas regumque turres; vix unus aut alter, rure vel in urbe, senex aut puer, robustus aut infirmus, evasit." The term influenza was first applied to the disease, which occurred in 1741-43; and which, in Messina and Sicily especially, was the precursor of plague. In some parts, it was preceded by a disease among cattle, attended with a bloody flux and eruptions on the skin. It commenced in Germany, and extended thence in a double direction; one, southerly; the other, north-westerly. It did not arrive in England until a year after its commencement. Its twofold course, and the great affection of the abdominal organs, chiefly distinguish it from the disease of 1830-34.

The influenza of 1756-58 and that of 1759 were so inconsiderable as not to require notice.

In October, 1761, an influenza commenced in Italy, arrived in Vienna during the following March, 1762, and in London in April. In the middle of the summer, it reached France, and in October, appeared in America. Its direction was from the east to Vienna, but from the north to France. The character of the disease in Vienna was the same as those of 1830-34. In general it terminated in recovery, but at Breslau, where it prevailed in February, eight hundred individuals fell a sacrifice to it. Dr. Schweich quotes Ozanan as his authority for this large and unusual mortality. Dr. Gluge says nothing about it, but considers Ozanan as a bad authority. The influenza of 1767 originated in upper Saxony, extended to England, and thence to France and Spain. At Eisenach it was preceded by a stitch in the side, from which few individuals remained free. Its extent was more limited than that of 1830-34, but its pathological character was very similar, excepting that in France there was a great tendency to a simple nervous fever. In 1775, an influenza commenced in Germany and affected the greater part of France. Though not more fatal, its character appears to have been more serious than usual. The chest and abdomen were both affected, and the crises proceeded from various sources. Among them were black and bilious stools. In France the disease was accompanied by the frequent formation of

abscesses in the ears. Some had angina and dysentery; jaundice occurred in the predisposed. Many had a troublesome pricking of the skin with scarlet coloured spots, ulcers or red vesicles not at all critical: or a well developed erysipelas occurred. Fothergill says that in this epidemic dogs and horses were subject to the catarrh before men; and the same was remarked in France. In September, 1780, the ship Atlas, sailing from Malaga to Canton, was affected with a nervous catarrhal fever, which appeared at the same time on the shores of Canton and Coromandel. In 1781, an influenza travelled westerly through North America. In October, 1781, it reached Europe, when the intelligence was first given that it prevailed in the British army which was occupied in the siege of Negapotamia. Thence, it proceeded over Tartary and Siberia, appeared in Moscow in December, and in January, 1782, at St. Petersburgh, where 40,000 are said to have been affected by it. It passed through Prussia, Germany, Denmark; spread along the shores of the Baltic sea and through Belgium into England. At this time also, it traversed France and Italy, where it remained during the summer. It existed also in ships in the Atlantic Ocean. It then visited Spain and Portugal. Its course was from north-east to south-west. The chief differences between it and the epidemics of 1830-34, which, in its course, it exactly resembled, was the appproximation of its character to that of an epidemic bilious fever. The extreme and sudden depression of the nervous system was very striking in this epidemic. In some parts, there were very marked spasmodic attacks. In Leipzig the fever was intermittent. The glands of the head and neck were much affected in some cases. Bilious and inflammatory symptoms were strongly marked in Cassel. The disease in Lunemberg, more than elsewhere, seemed to confine itself to particular parts of the body. Some had stitch in the side, hæmoptysis, epistaxis, violent headach, and pains in the eyes; others, nausea, tension of the abdomen, and diarrhœa; others, inflamed parotids, abscess in the ears, eruptions upon the hands and feet, salivation, dysuria. Hemicrania was very frequent in Memel, accompanied with nocturnal delirium. In Königslutter, the disease was like typhus. Cutaneous eruptions were not uncommon in Italy, where the disease often assumed a putrid character. In most of the cases, the bilious character of the disease was more or less evident. Hepatitis, jaundice, bilious stools and urine, and bilious vomiting are the most frequent symptoms in all accounts. There appears, also, to have been a transition to tertian and quartan fevers; convalescence was very long and relapses frequent.

In 1788-91, a mild influenza, originating probably in Asia, and proceeding thence, passed through the whole of Europe, and then extended to America. In consequence probably of its mildness, the accounts which are recorded of it, are few. In England, a pain in the scrobiculus cordis, and greater affection of the head, appear to have been the chief distinctions between it and the disease of 1833-34. It is said by Rush, that children under eight years of age, were scarcely affected by the disease. He mentions, also, that so general was the coughing that the clergyman could not be heard in church. From the scarcity of the accounts, it may be suspected that the disease was very mild. In 1799, an influenza commenced in Russia and extended over the greater part of it, thence it traversed some portions of Germany and France, in which

countries it took no determinate course. Italy was next affected. It appears to have spared the north of Germany, and not to have affected England, although it reached Scotland. It was distinguished from the disease of 1830-34 by the irregularity of its course, by its putrid, typhoid character in Germany, and by the addition, in the south, of acute inflammatory affections, as well as by the great frequency with which it appears to have affected hypochondriacal and hysterical individuals. Dr. Gluge speaks of hemorrhages from all the outlets, erysipelas, miliaria, swelled glands, delirium, as characterizing the epidemic; and that it left behind " a dread and depression of spirits as in those labouring under hypochondriasis, but which soon disappeared." With regard to this, also, it was observed, as some have remarked in other instances, the phthisical were not especially liable to be affected, nor did their disease become worse when the influenza left them.

In the foregoing account, we have made little allusion to the treatment which was employed in the various epidemics, as it would but have led to useless repetitions. Almost every class of medicines was at different times made use of, bleeding appears to have been most commonly condemned, although some have strongly recommended it; and, in other cases, the varying constitution of the epidemic was in part the cause of the difference of opinion on this subject. But bleeding was at times carried to a dangerous extreme; and in one attack of the epidemic in Russia, the mortality caused by bleeding was so great, that its discontinuance was ordered by an imperial ukase. The complications of inflammation or of very inflammatory fever appear to have been the only circumstances which justified bleeding, and even in these cases, its effects on the subsequent course of the disease were often manifestly injurious. Clysters or mild laxatives were found to be preferable to more active purgatives; emetics were often of considerable service. The indication, generally, seems rather to have been to promote a gentle action of the skin by mild diaphoretics, than to administer active sudorifics, by which inflammation was not unfrequently produced. In the early stage, stimulants and tonics were occasionally employed, and they have not wanted strong recommendation, but the time found to be best suited to their administration was the later period of the disease. In some epidemics, those of a milder character, a merely expectant treatment, consisting in the use of demulcents, constituted the chief remedial means. Bark, acids, camphor, opium, antimony, valerian, were employed by different practitioners; the reigning medical fashion, or the fancy of the individual, having probably a greater influence in determining their value, than the benefit which they effected on the disease.

The proximate cause of influenza, Dr. Schweich conceives to be an affection of the nervous system, extending from this to the vascular and muscular systems. This he conceives to be indicated by both the premonitory and other symptoms: the weakness, the subsequent fever, the altered blood, and the spasmodic pains in the muscles. True inflammation rarely exists; the blood never exhibits a truly inflammatory crust; false membranes are not formed; bleeding is almost always injurious, and the pains are not increased by pressure. Nervous congestions do occur, and inflammation is sometimes a consequence. In these cases there is an inflammatory crust on the blood, and bleeding is beneficial.

The spasmodic character of the disease is opposed to inflammation. The great debility manifests the affection of the nervous system, especially of the spinal marrow. The brain is seldom affected. From the alleviation which takes place from the various discharges in this disease, Dr. Schweich is disposed to regard them as critical. The influenza shows a great similarity to the febrile exanthemata, which always commence with catarrhal affections, and the occurrence of measles, scarlatina, and petechia, is not unfrequent in the disease. The character of the accompanying fever (which does not always exist) is influenced by the constitution of the individual and by the climate. In the north it is inflammatory; in the south torpid, and even typhoid. Old people appear to die of a nervous paralysis, and perhaps of the nervus vagus. In its various modes of appearance, influenza has shown a similarity to several epidemic diseases: to the English sweating sickness, by its mode of attack, great oppression, and sweating; and to the following diseases, by symptoms and characteristics which may be gathered from the preceding remarks,—to oriental cholera; to bilious, mucous, nervous, and typhoid fever; to scarlatina, miliaria, urticaria; and to petechial fever.

Considering the unsatisfactory nature of the occasional causes to which influenza has been ascribed, Dr. Schweich has produced an hypothesis of his own; one, it will be seen, which is nearly allied to the hypothesis applied by Dr. Buzorini to the explanation of the causes of typhoid diseases. He imagines that electricity being accumulated in the body, and being prevented radiating thence, gives the impulse to the disease. He adds, that if it can be shown that, during the prevalence of influenza, there is always an abnormal accumulation of electricity in the air, which, according to physical laws, is always an isolator of the electricity of the organism, this hypothesis should not be rejected until we possess something more satisfactory. The existence of miasma he conceives to be a purely gratuitous assumption. To attribute the disease to changes in the weather is unsatisfactory, as these changes often succeed the disease, and have often occurred without giving rise to it. Comets, meteoric stones, earthquakes, and volcanic eruptions have borne the blame of producing the influenza; and the previous objection applies to these, as also to the endeavour to explain its origin by the inspiration of microscopic animalcules. Dr. Schweich considers that, with respect to epidemic diseases generally, a more close investigation of electricity and of magnetism, during the existence of such diseases, may lead to useful results. All great changes in the atmosphere, and in terrestrial bodies, tend to alter very much the electric relations of the air; such as changes of weather in its temperature, moisture, volcanic phenomena, earthquakes, floods, &c. In this respect our author says, that the winds also require to be taken into account; as the north and east winds bring the positive, and the south and west the negative electricity. It is always set free by evaporation, and the northern lights appear to increase its quantity: but have such causes as these, which produce changes in the electric condition of the atmosphere only, always existed at the time of the appearance of the epidemics of influenza?

Dr. Schweich maintains that the result of an examination to this effect is favorable to his hypothesis. He then proceeds to show that, at the

time when epidemics of influenza have prevailed, there have existed
causes especially capable of changing the electrical conditions of the
atmosphere.   The chief among these are earthquakes, frequent and rapid
alterations of the weather, from hot to cold, and moist to dry; rains and
floods; offensive and thick fogs; northern lights; volcanic eruptions;
whirlwinds; other conditions indicated by remarkable barometrical
changes, &c.   But, however coincident some of these may have been
with certain epidemics, the conclusions which can be derived from them
in support of the electric hypothesis appear to rest on a very feeble foun-
dation.   Six of the epidemics which are related in the previous history
are without their accompaniments of such circumstances as are here said
to change the electric relations of the air; and it requires no octogenarian
experience to remember the occurrence of most of these circumstances
without the production of influenza.   The unsatisfactory character of the
first steps of this hypothesis will excuse our following its author in search
of the causes with which these terrestrial phenomena are associated.   As
the clue to its completion could not be found on earth, he has gone even
beyond the lunar sphere in search of it, and has endeavoured to show
that it exists in certain planetary conjunctions; the coincidence of which
with some epidemics he has illustrated.   In doing this we may perhaps
commend his ingenuity, but there are few who, in the present state of
our knowledge, and even with the assistance of Dr. Schweich's book,
will not perfectly agree in his conclusion that "it cannot yet be deter-
mined by what planetary conjunction the influenza is occasioned."
Dr. Gluge does not think the above conjecture worth the amount of
notice which we have given to it.   He is less prone to hypothesis, which
he justly regards, when meddling with the above subjects, as rather pre-
mature, considering the amount of our present knowledge of the elec-
tricity of organized bodies.

Whether contagion is one among the means by which influenza is pro-
pagated, neither of our authors can decide.   Dr. Gluge has said a good
deal about it, but, with such a conclusion, the reasons can be but little
acceptable.

For those who are desirous of possessing an elaborate history of influ-
enza we strongly recommend the works of Drs. Schweich and Gluge,
especially the former.   To what precise degree either or both may be
correct, can only be told by those who examine the many hundred
volumes whence the two before us profess to be derived.   We pretend
not to have done this. There is, with the slight exception already alluded
to, no morbid anatomy in either of the works.   This, however, is a sub-
ject to be borne in mind by future observers of these epidemics.

Art. V.

*The Stomach in its Morbid States: being a Practical Enquiry into the
Nature and Treatment of Diseases of that Organ, and into the
Influence they exercise upon the Origin, Progress, and Terminations
of Diseases of the Liver, Heart, Lungs, and Brain.* By Langston
Parker, m.r.c.s.—*London,* 1838.   8vo. pp. 303.

We hail this publication with pleasure, as evidently the production of
a practical and at the same time a reflecting and experienced mind, and
as one of a class of works in which medical literature has of late years
been somewhat deficient.   Zeal, industry, and talent have indeed
abounded in the profession, but they have not succeeded in advancing
the science of medicine in the same proportion as other sciences, or,
perhaps, so much as might fairly have been expected from the ardour
with which it has been cultivated.

One cause of this want of success is undoubtedly the complicated and
difficult nature of the enquiry; but another, and we fear a very active
one, is the limited and exclusive spirit in which medical investigations
are too often carried on.   From the multitude of phenomena, and the
complexity of the relations which require to be observed, there is perhaps
no science, for the successful cultivation of which extensive information, a
comprehensive grasp of intellect, accuracy of observation, and caution in
deduction are more imperatively required than in medicine.   In the more
elementary branches of knowledge, like chemistry, mathematics, or na-
tural history, the facts are well defined, simple, and unchangeable; and
what is once ascertained and placed in its natural order remains there for
ever, unaffected by present theory or future discovery; and hence *they*
may be mastered, and their boundaries extended, by persons whose ge-
neral knowledge is not great, or whose minds are not remarkable for
depth and comprehensiveness.   But in medicine, and particularly in
practical medicine, the facts on which we are to form our judgment and
ground our treatment are of a very different kind.   Instead of being de-
finite and easily verified, the facts of medicine are living phenomena, or
inferences from them, the true bearing of which is constantly liable to be
affected by a multiplicity of active influences in and around us, and for
the correct appreciation of which an ample stock of well-digested infor-
mation and accurate reasoning powers are not less indispensable than
well-disciplined powers of observation.   Medicine being thus what may
be called a *composite* science, requires for its successful cultivation not
only a sufficient acquaintance with its constituent elements—anatomy,
physiology, therapeutics, pathology, &c.,—but also the power and the
habit of embracing in one point of view the inferences furnished by each;
because, without the latter ground of security,—the correction of the one
by the other,—the risk of being misled by partial facts is very great.

It has been from overlooking the true nature and aim of medical re-
search, much more than from any want of talent in the profession, that
while we have excellent anatomists, excellent physiologists, and excel-
lent pathologists, who have each done much to advance their respective
departments of knowledge, we have still comparatively few eminent
physicians, or men who, skilled in all these elementary sciences, have

excelled in applying their knowledge to the grand object of medical art, the prevention, relief, and cure of disease. If this opinion requires confirmation, we have only to go back for conclusive proof to the subject which has of late years most occupied the attention of the profession, *morbid anatomy*, and to observe the exclusiveness of spirit with which it has been studied. So intent have many of its cultivators been in investigating the mere changes of structure produced by or accompanying the progress of disease, that the causes which first gave rise to them, the signs by which they might be recognized during life, and the means by which their action might be arrested before actual disorganization ensued, have till of late been comparatively neglected by them. There are, it is true, some brilliant exceptions; but it must nevertheless be admitted that morbid anatomy has been studied by some of its most zealous cultivators as if its highest and ultimate object was, not the safety and recovery of the sick, but merely the accurate delineation, after death, of the organic ravages induced by disease during life. So true is this, that we could point out excellent pathologists to whose professional care we would not willingly intrust the treatment of a common fever or pleurisy; and we know more than one who would not willingly undertake such a charge.

If the above representation be at all correct, which in perfect sincerity we believe it to be, can we wonder that practical medicine has not advanced so rapidly as might have been expected from the progress of discovery in several of the more elementary sciences; or can we hesitate to believe that much more might be effected were the physician better disciplined in the use of his faculties, and taught to embrace a wider range in the observation of phenomena, and to consider his knowledge of them as complete only after having studied them in their various relations to each other and to the living whole?

These remarks were forcibly suggested to us by the attentive perusal, or we may say *study*, of Mr. Parker's book; and we are anxious to enforce them because convinced that they tend more directly to the extension of medical knowledge than if we had confined ourselves to comments on individual cases or propositions from its pages. In this opinion we are supported by no less an authority than that of Bacon, whose depth of penetration we every day see fresh cause to venerate and admire. In treating of the Advancement of Learning, he says "Let this ground be laid, that all works are overcome by amplitude of reward, *by soundness of direction*, and by the conjunction of labours. The first multiplieth endeavour, the second preventeth error, and the third supplieth the frailty of man; *but the principal of these is direction; for claudus in via antevertit cursorem extra viam;* and Solomon excellently setteth it down, 'If iron be not sharp, it requireth more strength; but wisdom is that which prevaileth:' signifying that the invention or election of the mean is more effectual than any inforcement or accumulation of endeavours. This I am induced to speak, for that, not derogating from the noble intention of any that have been deservers towards the state of learning, I do observe nevertheless that their words and acts are *rather works of magnificence and memory than of progression and proficience, and tend rather to augment the mass of learning in the multitude of learned men than to rectify or raise the sciences themselves.*" In strict accordance with this principle, we are anxious only for greater *soundness of direc-*

tion in medical investigations, in the full assurance that this, more than any mere augmentation of the mass of learning, is wanted to ensure the rapid rectification, *"progression, and proficience"* of the healing art. *False facts* are the bane of medicine more than of any other science; and we cannot but regard the partial knowledge which we refer to as the great source from which they spring.

In medical education, then, that branch ought to be considered the most important which combines and applies all the others to the elucidation of the nature, prevention, and treatment of disease; and yet this is precisely the part which has advanced the least, and to which least attention is still paid. It is true that clinical instruction has now a place in our curricula, and that it *ought* to do all this; but how rarely is it taught as it ought to be, and how little does it in reality interest the student! It *professes*, no doubt, to teach him to observe the outward expression of a disease, to investigate its less obvious signs, to distinguish it from others of an analogous nature, to devise proper principles of treatment, to choose his remedies appropriately, and to administer and modify them wisely and consistently; and, last of all, when death occurs, to trace the changes of structure which the disease has produced, and the relations which these bear to the symptoms observed during life: but where is such a rational and comprehensive course of instruction really given? When actually obtained, however, as it is now and then, the grand advantage of such a course is, that it disciplines the mind to patient and accurate observation and sound reasoning, and tends constantly to bring together into one useful whole the commonly disjointed branches of knowledge, which, in their separated state, serve only to "augment the mass of learning," and to mislead rather than to direct.

The work before us possesses many of the qualities which we are desirous of seeing combined in medical enquiries. Essentially practical in its character, it yet presents nothing of that exclusiveness of spirit which can embrace only one branch of a subject, and shuts out the consideration of all its general relations. Thus, while morbid anatomy is pursued by many as if the patient applied to the physician rather to ensure the honour of a *post-mortem* examination than in the hope of being cured, Mr. Parker seems to consider success in treatment as a primary object; and, while he attaches all due weight to the investigation of pathological changes, he attaches still more to the early recognition of the phenomena by which these changes are preceded; his primary object being that the existence of disease may be detected while it is yet curable, and the changes themselves, which no physician can undo, be effectually prevented. This, in truth, is the leading principle of Mr. Parker's investigations into the primary morbid states of the stomach, and we are not aware that he could have chosen a safer or more useful guide.

The subject of a work and its mode of treatment being determined, nothing tends more to clearness of exposition than simplicity of arrangement; for in books, as well as in speeches, it is a point of excellence to have a beginning, a middle, and an end; or, in other words, that things should follow each other in their natural order, and not be scattered about or unnecessarily intermixed. In this respect professional treatises in general cannot lay claim to much merit; and of the one more directly before us we are disposed to say that, although better than most others,

it is still, in a practical point of view, susceptible of an improved arrangement. For example, when Mr. Parker so judiciously divided the primary morbid conditions of the stomach into three great classes,—the congestive or inflammatory, those characterized by lesions of sensibility, and those in which disordered secretions are the prominent phenomena,—he ought to have taken up each in succession, and exhausted all he had to say upon it before proceeding to another: but this he has not done. Beginning in the first chapter with " the morbid states of the stomach characterized by *increased vascularity*," he treats in the second of those "*dependent upon anæmia*," and in the third returns to a "general review of the *symptoms and sympathies* dependent on *vascular irritation of the stomach*." This is followed by one on its "confirmed inflammatory affections;" after which he treats of its nervous and secretory derangements: these constituting the substance of what we should call the first part of the book. In the second part, according to our view, although it is not so distinguished by the author, "the influence of the stomach upon other organs," and the influence of its diseases in exciting disease in them, are very ably discussed: after which the book ends with a chapter on Treatment, which abounds in sound sense and valuable practical observations.

In commenting upon this arrangement, we do not mean to deny that it possesses some advantages and affords facilities for consultation, but we cannot but consider it as faulty where our object is to acquire a comprehensive acquaintance with the morbid affections of the stomach. To say nothing of the impolicy of placing a chapter on *anæmic* affections in the midst of others treating of those of *increased vascularity*, we think that the seventh chapter, on the influence of the stomach upon other organs during health, ought properly to have been the first in the book, because a knowledge of the healthy sympathies of the stomach is required to understand the meaning of many of the symptoms attendant on its morbid states; and, had these been explained at the outset, *all* the cases would have been perused with increased advantage by the student. Further, we cannot help thinking that, by separating the subjects of the first, third, and fourth chapters so entirely, Mr. Parker has unnecessarily complicated his exposition, and subjected his inexperienced readers to the risk of believing the affections treated of to be distinct and separate diseases, rather than what they really are, different degrees of the same thing. We are quite aware that hyperæmia may exist without inflammation, but Mr. Parker himself admits that it is the first step towards it, and a simpler and more instructive arrangement would have been to adopt the *general* division of "morbid states of the stomach dependent upon congestion or inflammatory action," and to range hyperæmia, vascular irritation, and confirmed inflammatory action, as three subdivisions or successive degrees of the same thing. A greater unity in the detail of the symptoms and progress, in the investigation of the causes, and in the principles and *modus operandi* of the treatment, would thus have been ensured, and the risk been prevented of studying each as a separate entity dissimilar to the others; while at the same time considerable repetition would have been avoided.

There is still another point of view in which we think the work before us might, in common with many others, be greatly increased in value;

and we allude to it now, not only from a conviction of its practical importance, but from believing that Mr. Parker will himself thank us for the suggestion. On reflecting on the most common difficulties of practice, every experienced physician will admit that the grand source of doubt and obscurity is, in most instances, the uncertainty in which we are left as to the true nature of the affection for which we are called upon to prescribe; and that, when we can obtain positive indications on that head, it becomes comparatively easy to determine what treatment ought to be adopted. In the case of stomachic affections, for example, as soon as we can ascertain clearly whether the symptoms depend on inflammatory action, on morbid sensibility, or on disordered secretions, the battle is half won; because we can then decide at once on the *kind* of treatment required, and have only to adapt it in degree to the individual case and constitution, to ensure the best results which its nature admits of. But when we meet with a case in which we cannot determine from what cause the symptoms arise, it is then we are puzzled how to act, and that errors in judgment, injurious to the patient and distressing to the practitioner, are apt to occur. In cases of this description, where the difficulty of a correct diagnosis is very great, it is rather from a careful consideration of the peculiarities of constitution, the nature of the exciting causes, and a minute history of the disease, than from the prominent symptoms, that we draw our conclusions and decide on the means of cure. In all cases, indeed, whether obscure or not, an accurate acquaintance with these modifying circumstances is of great use in planning and conducting the treatment, and protecting the patient against future attacks, and therefore they ought always to be noticed. Without them the narrative of a case is incomplete and comparatively uninstructive; and, as a few lines suffice for the purpose, there can be no good excuse for omitting them.

To apply these remarks to Mr. Parker's work, we have only to bear in mind the difficulty which is frequently experienced in deciding whether digestive derangement arises from inflammatory action or from morbid sensibility, and the importance of everything from which assistance can be obtained in arriving at the truth. Mr. Parker mentions several patients, for example in whom great epigastric pain, aggravated on pressure, strong pulsations, fulness, and all the usual symptoms of inflammatory excitement, were produced by the opposite morbid state, and consequently aggravated by leeches and low diet, while they were cured by wine, nourishing food, and tonics. Similar occurrences are by no means rare with other organs as well as the stomach. Thus, great excitement of the brain arises from an exhausted as well as over-stimulated state of the system, and is then appeased by food and wine, which in the opposite state would be destructive of life. This is seen even in the delirium of fever, which in the commencement of the disease is generally caused by excess, and in the latter stages more frequently by deficiency of stimulus. In all such cases, then, the safety of the patient depends wholly on the accuracy of our decision; and yet, where the prominent symptoms are thus alike, it is only from a consideration of the modifying causes above noticed that we can select any grounds for an opinion.

Influenced by considerations of this kind, we have long thought (and our opinion is confirmed by the perusal of Mr. Parker's cases and

remarks,) that the constitution, previous history, and habits of the pa-
tient, and the causes of disease, are not generally enquired into with
sufficient minuteness; and that much valuable information, applicable
to both the diagnosis and treatment, is thus lost; while the patient is, on
his recovery, left to run the same course, unwarned of the risk to which it
exposes him, till he finds himself becoming the prey of another attack.
That an acquaintance with the individual constitution, taken along with
other considerations, affords an additional clue to the nature of the
morbid state, will scarcely be denied by any reflecting practitioner.
Thus, we find that a person of a full and strong habit of body is prone to
affections of an inflammatory character; while another, of a highly ex-
citable nervous temperament, will be predisposed rather to affections
attended with increased sensibility without vascular irritation.   From this
peculiarity, the same cause may produce a different form of disease in
each.   Where, for example, indigestion is brought on by intemperate
eating, (by which we mean eating more than the system and mode of life
require,) in a constitution of low excitability, the affection will most pro-
bably be at first, and continue for a shorter or longer time, of a purely
congestive character, leading gradually to glandular obstructions and
morbid secretions; while the same cause operating in a person of a san-
guine temperament and excitable circulation, will be more likely to
induce inflammatory action, and all its attendant consequences.   If,
again, the constitution be highly nervous and irritable, and the cause be
anxiety of mind, the sensibility of the stomach may become exalted
without real vascular excitement, and the most prominent symptoms be
those arising from the sympathetic disturbance of other organs.   But as,
from a variety of circumstances, each of these states is constantly liable
to be converted into one of a different kind, it is obvious that, although
we may derive much assistance in forming a correct diagnosis from con-
sidering the relation between the exciting cause and the constitutional
tendency, we ought never to trust to the latter alone, but to examine *all*
the phenomena, and the changes which occur in them, with scrupulous
care, before finally determining upon our course of action.

An acquaintance with the *causes* as well as the constitution is not less
useful in throwing light upon the nature of disease, and affording indi-
cations for its successful treatment; and we are therefore desirous that,
in a narrative of cases, they also should be more distinctly stated.   It is
true that they are often difficult of detection, but we have ever found it an
excellent rule in practice to take it for granted that an active cause *does*
exist, whether we can find it out or not, and consequently never to lose
sight of any opportunity of getting at it which a better acquaintance with
the patient's condition or private history may afford.   It is astonishing
how often and how completely we may be misled if we trust implicitly to
the statement of the patient, especially in answer to a general question,
where a different meaning may be attached to the same words.   Thus,
when we enquire whether he is aware of any cause for his ailments, he
will necessarily answer according to what he believes to be causes, and
may confidently, and honestly, and rationally reply in the negative,
where, on a little examination, a cause, very palpable to a practitioner,
becomes immediately apparent.   About a year ago, for example, we
were consulted for severe indigestion, by a strong, healthy-looking man,

in the prime of life, who declared that he knew no cause whatever for his ailments. On our expressing an opinion that a very powerful cause *must* be in operation to induce such a state in a person of his formation, and catechising him closely as to his habits, it came out that he was extremely fond of shooting and athletic sports; and that in the highlands, where he chiefly lived, he was in the custom of walking out after a good breakfast, and spending the whole day on the hills, without further support, till he returned nearly exhausted to a six-o'clock dinner, to which he sat down famishing, and, after eating almost to oppression, he fell into a deep sleep, from which he awoke disturbed by dreams and flatulence. So far from considering this mode of life as the cause of his indigestion, his wonder was why he, who was so constantly in the open air, and took so much exercise, should nevertheless have an inefficient stomach! In another instance we were lately assured by a lady, to whom we were called in the country, and where we had not an opportunity of seeing the evacuations, that her bowels were in perfectly good order and acted daily; when, on examining the abdomen to remove our scepticism on that point, we found it distended by fæces. On ordering a succession of active purgatives and injections for their removal, the patient remonstrated, and stated that, as she had repeatedly of late taken salts, which operated freely, it would weaken her too much to give her more, and that she could not require them. We of course insisted; and when, to her great surprise and relief, an enormous quantity of solid fæces made its appearance, she then said that it was *many weeks* since she had passed a natural evacuation *of that kind;* but that, not knowing that liquid excretions were insufficient, she had answered our questions as she did. In a third instance, of very recent occurrence, we were assured by a gentleman of much good sense that he knew no cause for a continual irritation subsisting in the stomach and bowels, attended by great depression of spirits and sleeplessness, and that all his habits were regular and temperate. It turned out, however, that, feeling much debility, he was eating meat twice a day, by way of keeping up his strength; making a very long fast between breakfast and dinner, on account of business; taking a glass or two of wine after dinner, *to relieve exhaustion,* and a good supper and spirits and water at night, *to promote sleep;* and, to crown all, taking frequent irritating purgatives, *to carry off the offensive matter* which lodged in his bowels and caused the depression! As he had an apparently good reason to assign for each of his practices, and felt immediate relief from his purgative, it never occurred to him that any of them could be looked upon as the real *causes* of his sufferings; and, even when the fact was pointed out to him, he was at first not a little incredulous. The excess of food, the long fast, the supper, the spirits, and the purgatives were evidently the original causes of the irritation; and, when these were obviated, and the diet for a time restricted to mild farinaceous food, without wine, he began to recover: still, however, occasional relapses arose, chiefly from the abuse of purgatives, which he was unwilling to give up, because, as he said, he *felt* relief from them, and they must therefore do good. Ultimately his eyes were opened to their true effects also, and he got well much sooner than he expected.

We have insisted, at some length, upon the necessity of careful examination into the facts of the case, because it is peculiarly in stomach

affections that both patient and practitioner are apt to be deceived, unless the latter satisfies himself by his own observation, and that a right regimen (using that term in its widest sense) can accomplish more than is commonly imagined.   If the practitioner contents himself with merely ascertaining what the affection is and prescribing medical treatment for its relief, he leaves the half of his duty undone, and the patient speedily relapses into worse than his former state.   In this respect we cannot but consider the majority of Mr. Parker's cases as defective.   He rarely mentions the natural constitution of his patients, their past habits and mode of life, or the numerous and important conditions of *general* regimen, which are at least as essential to recovery as the purely medical part of the treatment.   The consequence is, that his cases are not so instructive to others as a few particulars of this kind would have made them; and that the opportunity is lost of connecting the appearance of the disease with the errors of regimen which produced it, and consequently the clue which they offer to a proper curative and preservative treatment is not sufficiently appreciated.   Mr. Parker, indeed, is not the only author against whom this charge may be brought.   The defect of which we speak is common; and, as it has an injurious influence on practice, we shall offer an example or two in illustration of our meaning.

On opening the volume, the first case which presents itself is one, p. 68, entitled " morbid sensibility of the stomach with epigastric pulsation."   It is there stated that " a lady labouring under hepatic disease became affected, during its progress, with pain after taking food, occasional vomiting, and tenderness in the epigastrium of a slight character.   There was strong pulsation at all times visible to the eye, and communicating a powerful impulse to the hand laid upon it.   Her dyspeptic symptoms and the pulsation disappeared after one or two applications of leeches, succeeded by blisters."

Now we submit that such a narrative conveys the minimum of information which any case can afford, and that its whole meaning is made unnecessarily to rest on our estimate of Mr. Parker's skill and trustworthiness, (of both of which, however, we have a high opinion;) whereas ten lines more might have made it replete with useful instruction and stable on its own foundation.   The cause, its relation to the peculiarities of constitution, its mode of operation, the nature of the disease, and the rationale of the cure, are all left to conjecture ; and, indeed, from the relief of the symptoms by leeches and blistering, we are led to imagine that the case was one of inflammatory congestion, rather than of morbid sensibility. But how much more instructive would it appear, were it to be mentioned that, ' after exposure to mental anxiety, a lady of a given age, of a *nervous and irritable constitution and previously delicate health, accustomed to a sedentary mode of life and full diet*, became affected with hepatic disease, during which she suffered from pain after taking food, occasional vomiting, tenderness in the epigastrium accompanied by strong pulsation visible to the eye; and that, by the application of a few .eeches, followed by quiet of mind, mild diet, and gentle exercise, she speedily recovered.' We know nothing of the real history of the lady; but, supposing it to be as we have stated, all the parts of the case immediately throw light upon each other, and the rationale of the treatment becomes so self-evident, that no reflecting mind can read the statement without carrying away

from it definite principles of action applicable to other cases, and applicable with such modifications as a difference in the elements may require. This is, in our opinion, the only or chief value of cases, and we suspect that the very different results obtained by different practitioners from the use of the same remedies is to be ascribed to the neglect of these more important particulars. We admit most readily that all Mr. Parker's cases are far from being so meager; on the contrary, many of them, as well as the remarks which follow them, are very instructive; but they might *all* be greatly increased in practical value and present interest by the addition of a few sentences explanatory of the conditions which we have mentioned.

That this constant reference to the habits and constitution of the patient is of real importance in practice will be still further evident from a survey of the cases above narrated, as having lately occurred to ourselves.   Had we implicitly relied on the first patient's assertion, that there was no cause for his indigestion, we might have sent him back to the mountains to remain a sufferer, because he would have returned unsuspectingly to the mode of life which excited the evil.   Not aware of the necessity of renewed supplies of nourishment to the system at proper intervals, he made long fasts even while using great bodily exertion; and not aware that bodily fatigue *exhausts the stomach* in common with other organs, he sat down to his evening meal on his return home before the fatigue went off; and, believing that his day's exertions required an ample dinner, he ate almost to repletion; and, overcome by fatigue and the distension of stomach, fell forthwith into a profound sleep, which still further impaired the digestive powers.   Here, it is obvious, no permanent cure could be effected without a direct reference to the past history and exciting cause.   On various occasions, accordingly, he had come to town for advice; and, by local depletion, moderate diet, and mild laxatives, speedily obtained relief; but, invariably on his return to the country, the symptoms recurred, much to his own surprise, as he always understood that country air and exercise were the best cures for indigestion.   On explaining to him the errors into which he had fallen, and urging him to adapt his mode of life more closely to the laws of his constitution, he had no difficulty in understanding the causes of his relapses, and promised to avoid them in future.   When we last heard of him, he was much better, but not entirely well.

In the third case, again, the patient, who was a man of much good sense, conceived himself acting very properly when he took much nourishing food and wine, to relieve the sense of debility; spirits and water to procure sleep; and constant purgatives, to relieve the depression and carry off offensive matter.   From all of these practices he felt *immediate* relief; and thence, naturally inferring that they were beneficial, he had no hesitation in declaring that he knew no cause whatever for his ailments: and yet, to any one who was acquainted with the human functions, it was manifest that he was taking twice the quantity of nourishment which his weakened stomach could digest or his sedentary mode of life require; that the wine merely relieved the oppression caused by the undigested food, and that the supper and spirituous drinks merely gave him rest by nightly inducing a state of oppression akin to apoplexy.   In his former treatment most of these things were overlooked; and hence,

after having been twice relieved by physicians under whose care he placed himself at a distance, he also relapsed on his return. But when his reason became convinced, he changed his whole system of living, and with the best results; for, when we saw him lately, he presented a healthy clearness of countenance and alacrity of mind to which he had been long a stranger.

We have already mentioned, as a strong recommendation of Mr. Parker's work, that the author is not *exclusive* in his views, but endeavours to see and represent things as they really exist in nature, and to rectify his own observations by the experience of others. In confirmation of this remark, we would refer to the discrimination exhibited in almost every chapter of the book, and to the whole tenor of his remarks on the morbid states of the stomach characterized by increased vascular action. So far from resting satisfied with a single examination of a case, Mr. Parker inculcates the necessity of a watchful observance of its progress and changes throughout its whole course, and shows, for example, that an affection, which is undoubtedly inflammatory at its commencement, sometimes passes into the opposite condition in a very short time, the original symptoms remaining so essentially the same as to mislead the incautious observer into the belief that the inflammatory character continues. Leeching and low diet may thus be very appropriate remedies at the out-set, where their repetition and continuance—apparently warranted by their first good effects—really aggravate all the symptoms, and thereby seem, to those who do not recognize the actual change in the morbid state, to call for still further depletion. Occasionally, indeed, the assem-blage of symptoms occurring in the one state is so identical with that usually observed in the other, that it is chiefly by attention to the consti-tution and previous history of the patient that we can arrive at an accu-rate diagnosis. Mr. Parker mentions a case of this kind which exhibited, "*in the most marked degree*, all the symptoms attendant upon the inci-pient stages of inflammatory disease of the stomach." "The pain after food, tenderness in the epigastrium on pressure, vomiting, scanty urine," (p. 15,) which commonly denote an inflammatory state, were all present, and yet it was in reality a case requiring the use of tonics, porter, and animal food; and under their influence speedy recovery ensued.

The same discriminating comprehensiveness of mind is conspicuous in Mr. Parker's remarks on the indications afforded by the state of the *tongue*, and their frequently deceptive character; and also in what he says on the necessity of a careful examination of the epigastric and hypo-chondriac regions, and the utility of *percussion* in determining the real nature of the gastric affection. The observations on *appetite* and on *nausea* are also very good. According to Mr. Parker, the appetite is rarely defective so long as the inflammatory irritation of the mucous coat is limited in extent, and it is null only where the disease occupies the whole or a large portion of the mucous surface. *Nausea* he considers an almost invariable attendant on inflammatory indigestion, and it occurs either immediately or within two or three hours after taking food. In another place he notices the supervention of *acute pains* in the chest resembling pleurisy, which, being accompanied by *cough* and *quick*

breathing, are often ascribed to pulmonary disease, and consequently mis-
managed; when, in fact, they are caused entirely by chronic gastritis.
Many persons die, he says, of affections thus induced, who might have
been easily cured if the true nature of the disease had been detected at
the beginning. This is peculiarly apt to happen in children, in whom
" hurried breathing is often the most marked symptom of gastritis," when
occurring along with occasional sickness and crying. The stethoscope
and direct auscultation are here precious resources, from the negative
evidence which they afford. Of *vomiting*, as a symptom of gastritic
inflammation, he thinks with Andral, that it occurs principally " where a
chronic state assumes the acute type, or where an obstacle is offered to
the free passage of the food either in its entrance to, or exit from, the
stomach." (p. 43.) It is far from being an attendant on all cases of
gastritis.

On *morbid sensibility*, as a cause of indigestion, there are many valu-
able observations which we cannot stop to notice; and here, as elsewhere,
the author avails himself of the experience of other writers to perfect his
own views. In this section of the book, are to be found two or three
excellent cases; and, at p. 58-9, some interesting comments occur on the
occasional combination of the inflammatory with the nervous form of
disease—a peculiarity which increases the difficulty of treatment, and
which it requires all the care and sagacity of the physician to meet
successfully.

The chapter on " the morbid states of the stomach, characterized by
disordered secretions," is of an equally practical character with the rest,
and is also illustrated by some apposite cases. One of these, which is
particularly instructive in its details, we shall here give at length.

" A lady, aged twenty-nine, one year married, had suffered for three months prior
to her consulting me from total loss of appetite, weight and uneasiness in the epigas-
trium, constant nausea, with frequent vomiting of food, and mucous discharges. She
had constant headach, seated in the forehead and temples, and a total indisposition to
sleep. The breathing was quickened, and there was a short, dry, frequent cough.
The lungs, on examination, afforded no evidence of disease. Leeches, blisters, and
counter-irritants, had been applied to the epigastrium, with the effect rather of aggra-
vating than relieving any of the symptoms of stomach disorder. Aperients, in various
forms, had been tried to their fullest extent; opiates had also been administered, with
a view of procuring some rest: but all had failed. The patient actually passed night
after night without closing her eyes. Leeches were now applied to the temples and
behind the ears, and these were succeeded by blisters: these remedies aggravated the
pain in the head, and brought on delirium. The stomach still continued in the same
state, in spite of all that had been done; whilst the sympathetic irritation of the head
and chest were worse. I now reflected whether I had not to treat one of those dis-
eases which depend upon the accumulation of a mass of morbid secretions in the
stomach and first passages, and which, though admitted as a fruitful source of disease
by Stoll, Tissot, Finke, Pomme, De Larroque, and others, had been almost ridiculed
out of the domain of pathology by the doctrine of irritation substituted by Broussais,
in which all these secretory disorders are considered as the result of inflammatory
action. Finding that local depletion, blisters, counter-irritants, and aperients had
failed, whilst the state of the patient, the heat of skin, and arterial excitement, com-
pletely prohibited the exhibition of tonics, I determined to try the effects of the tartar
emetic, from which vast benefit had been derived in such instances, both by De
Larroque and Andral. Two grains of this substance were administered. The
patient vomited an immense quantity of bilious and mucous fluids; the stomach
became comfortable, the sickness and nausea disappeared, and for two days the head

remained free from pain. In a few days the symptoms returned in a milder form. The remedy was again employed: vomiting of the same discharges to a much less extent. After a third repetition there was no more return of complaint; the patient became perfectly convalescent. *Remarks*.—This case exhibits two or three points which it is important to notice :—1st. That secretory irritations of this kind may continue for an indefinite period without being accompanied with any real inflammatory action of the stomach. 2dly. The sympathetic affections which they excite are sometimes of a purely nervous character and aggravated by all antiphlogistic treatment, as the present case shows. We need only refer to the effects of treatment to establish this." (p. 83.)

The most important division, however, (or rather what ought to have been a division,) of Mr. Parker's treatise, and perhaps the one which he has treated most ably, is that in which he discusses the influence of morbid states of the stomach on the origin and progress of disease in remoter organs. In one sense, indeed, it cannot be affirmed that this influence has been neglected, for one of the commonest resources of medical men in obscure cases is to lay all the mischief to the charge of " the stomach and bowels," and to mystify the patient by talking gravely about " indigestion" and " bile" as the origin of all his sufferings, where, if they were seriously taken to task, nothing would puzzle them more than to substantiate their assertions. But this is not the way in which Mr. Parker disposes of the subject. Aware from experience of the reality of the stomach's influence upon the course of disease, he first examines its healthy relations to other organs, and afterwards endeavours to trace their morbid sympathies by a constant reference to well marked and accurately observed cases; and having thus obtained definite and consistent facts, he next seeks to apply them to the better elucidation of the curative treatment.

In investigating this branch of the subject great caution is required not to confound affections which are really consentaneous results from a common cause, with those indisputably arising from the sympathy of one organ with another *previously* disordered. Thus, one of the most frequent complications of chronic gastritis is with affections of the liver, and this is generally accounted for by supposing the irritation to be propagated by " continuous sympathy," or otherwise from the stomach to the liver, and to excite vascular congestion and disturbance of function in it as well as in the stomach itself. In a great number of cases, we have no doubt that such is accordingly the true origin of hepatic disease; where, for example, the primary stomachic irritation arises in a person of active habits from intemperance or errors in diet, the first or direct action of which is upon the stomach. But there are numerous instances, as in people of sedentary professions exercised in a confined air, to which this explanation is inapplicable, and where the circulation in the liver, lungs, and heart becomes impeded, not so much from sympathy with the stomach as from being subject with it to the action of a common cause; and the mutual relation of the phenomena is merely their dependence on the same mode of life. This is not a mere theoretical distinction, for it bears directly on the success of practice. In both cases, a congested state of the stomach and liver is the real subject of treatment; but, in the one, the congestion depends entirely on local irritation inducing increased vascular action, first in the stomach and afterwards in the liver; and little more is required for its cure than to remove the stomachic irritation by

appropriate diet and other means, after which the hepatic affection will subside from its cause being no longer in operation, and without any further change in the habits or mode of life of the patient; whereas, in the other, the congestion in both organs is the simultaneous effect of a cause acting equally upon both, and consequently the congestion of the liver being as much primary as that of the stomach itself, no form of treatment will prove available, *however appropriate to the state of the stomach*, so long as the impediment to the abdominal and hepatic circulation arising out of the constrained position and sedentary mode of life remains unremoved. It is for this very reason, indeed, that cases of indigestion with hepatic symptoms are met with among shoemakers, tailors, dressmakers, engravers, and clerks, which prove intractable under the usual remedies, even aided by a well-regulated diet, and yet are speedily cured by an accidental or intentional change to a more active profession. In all of the instances alluded to, the position of the body when at work is precisely such as directly to compress the epigastrium; to impede the free action of the diaphragm and abdominal muscles; and to prevent the due expansion of the lungs; or, in other words, to bring into active operation three most efficient causes of *hepatic, gastric, abdominal,* and *pulmonary* congestion: and if to these morbid influences we add that of errors of regimen, occasional intemperance or accidental exposure, we can have no difficulty in explaining why hepatic affections should often accompany indigestion; and why both, as branches from one root, should often spring up together and prove intractable so long as their real causes remain in activity. We have more than once seen young men, who were forced by circumstances to continue in a sedentary profession, observe every secondary precaution and take regular daily exercise, without being cured, and get well almost immediately on going into the country and leading a life of activity in the open air. The mere walk for an hour or two, which constitutes exercise in a town, is not sufficient to undo the mischief of *many* hours' constraint; and hence, though it palliates the symptoms, it fails to induce recovery.

Mr. Parker himself takes notice of this source of congestion, and quotes some excellent remarks from Portal on its influence in inducing diseases of the heart and general disturbance of the circulation; but, we think, he has scarcely attached to it so much importance as it really deserves, as an active and prevailing cause of bad health. At the same time, we admit that it would be easy to extract from the volume before us many proofs of the truth of the position we have just been enforcing, and there is one case in particular so perfectly opposite that we cannot refrain from quoting it. Mr. Parker was consulted by a gentleman " for what the latter considered mere prolonged and obstinate indigestion. On examining carefully into his state, I discovered," says Mr. Parker, " that he had extensive valvular disease of the heart, and that his *stomach disease resulted from an unusual quantity of blood retained in the mucous coat of the stomach and its veins, from a mechanical obstacle to its free return to the heart* caused by disease existing in that viscus." If indigestion and gastric congestion can thus be produced by a physical cause preventing the return of the venous blood, it cannot be denied that the same results *may* follow from any other kind of obstruction; and we have no doubt that hypertrophy of the liver and other abdominal diseases often

take their origin in similar impediments of an accidental or organic kind. In the above case, of course, no cure could be effected, because no treatment could restore the heart to its normal state.

As additional illustrations, may be mentioned, that we have seen many instances in which we could distinctly trace what is called stomach cough, shortness of breathing, and palpitation, (which were previously ascribed to nervous *sympathy* with stomachic irritation,) to oppression of the pulmonary circulation from the same cause, acting at once upon the stomach, the lungs, and the heart, deranging the functions of all at the same time. When the lungs are inadequately expanded, the circulation through them is impeded, the vessels ramified on their mucous surfaces become loaded, the dilatation of the air-cells is thereby still further diminished, increased secretion takes place, and the absorbing power of the veins being impaired, cough is excited to relieve the sense of oppression thus induced. The increase of cough after eating, so often observed in such circumstances, seems to arise from the increased distension of the stomach acting as an additional impediment to the dilatation of the lungs.

To account for the irregularity in the action of the heart prevalent in indigestion, we have only to pursue the enquiry a step further. The free passage of the venous blood through the lungs being prevented, it follows that it cannot arrive in due quantity at the right side of the heart. As a necessary result from the want of its proper stimulus, the latter acts feebly, and sometimes does not contract till an unusual quantity of venous blood has accumulated in its cavities. It then beats violently three or four times in succession, and after a pause relapses into its former feebleness; and, by and by, the same phenomena are repeated, till, if the cause be long in operation, permanent dilatation of the right auricle and ventricle ensues. We have often seen—we might say we have experienced—what we now describe; and always in circumstances which left little doubt as to the real origin of the venous congestion, and demonstrated that the pulmonary symptoms and disturbance of circulation were not owing to sympathy with stomachic irritation, and that the whole phenomena were the direct and simultaneous consequences of a common cause. The influence of grief, anxiety, and other depressing passions, in inducing indigestion and other forms of disease, admits of a similar explanation. The natural activity of mind and body disappears for the time, and the respiration is slow and greatly diminished in extent. The lungs being imperfectly inflated do not afford free passage to the blood, and muscular action being impaired, the impulse to its circulation is also withdrawn. Hence arise nearly the same results as from physical constraint.

From a good deal of attention to the subject, we incline to think that this hepatic and abdominal and perhaps pulmonary congestion is more common and influential in the production of bad health, and especially of chronic diseases both of the stomach and lungs, than is generally believed; and those of our readers who are acquainted with the best German writers must be aware of the importance which they attach to abdominal engorgement in particular. It would lead us out of our present path to discuss the subject fully here; but the more narrowly it is investigated, the more convincing will the proofs become of the influence of causes of this nature, which in this country have till lately been almost overlooked, and without the removal of which recovery can scarcely be

expected. We do not deny that affections of other organs are excited purely by sympathy with stomachic irritation. They frequently are so, and then the first step to their removal is its cure; but they occur chiefly in nervous and excitable constitutions, while the affections apparently sympathetic but really from a common cause are met with chiefly in persons of less nervous susceptibility. Often, however, the two are blended in one individual, and this is just another reason why the practitioner should, in every case, have his attention alive to all possible contingencies and not decide rashly where serious harm may be the result of error.

Our limits being completely exhausted, we must now take leave of Mr. Parker, although we have omitted a variety of extracts which we had marked for insertion, and left many points untouched which we were desirous to notice. The length of our review and even the nature of our strictures, are indisputable evidence of the interest we have felt in his work; and we can assure him that if we had believed it to be a merely ephemeral production, we should have been less anxious either to point out its defects or to offer suggestions for its future improvement. But like all books written for the purpose of adding to the mass of useful knowledge, and containing the results of careful and extensive observation digested by a well informed, truthful, and reflecting mind, the work before us is, we trust, destined to enjoy a far more vigorous and protracted existence than is likely to be the lot of most of its rival contemporaries.

Art. VI.

Die Zurechnungsfähigkeit der Schwangern und Gebärenden beleuchtet Von Dr. Johann. Chr. Gottfr. Jörg, ordentlichem Professor der Geburtshülfe an der Universität zu Leipzig, &c. &c.

On the Legal Responsibility of Females during Pregnancy and Parturition. By Dr. J. C. G. Jörg, Professor of Midwifery in the University of Leipzig.—*Leipzig*, 1837. pp. 419.

The title of this work is calculated to convey but a faint idea of the number and importance of the subjects of which it treats. The development of the generative functions in the two sexes, the influence which this development exerts upon the body, the changes induced by pregnancy in the female, the signs and symptoms of that state, the growth of the fœtus, the natural and physical causes of abortion, the doctrine of protracted gestation, the psychological changes which take place in the female at the period of parturition, and the accidental and natural causes of the death of the new-born child, are questions which are here fully discussed. We proceed at once to offer an analytical digest of some of the more important of these subjects to the notice of our readers, and endeavour to show their application to the principles and practice of medical jurisprudence.

The volume commences with some introductory remarks on the sexual functions, and on the dangers which result from the abuses of these in either sex. We find here but little calling for particular notice. The author considers that, at the age of puberty, there is a greater tendency

for the individuals of the two sexes to be guilty of acts not only incon-
sistent with their usual conduct, but often leading to serious criminal
responsibility.   He explains this by supposing a sympathetic reaction to
be exerted through the sudden development of the generative organs on
the brain.   Without entirely adopting this view, it certainly has often
struck us as a very remarkable fact that, in our own agricultural districts,
so many young females, about the age of puberty, should have been
guilty of acts of incendiarism; acts often perpetrated without the least
apparent motive, and against their best friends.   On these occasions,
unfortunately for the accused, it has not been thought necessary to exa-
mine into the state of mind of the party: the *sudden* manifestation of
insane conduct in females so situated not being as yet considered, by
legal authorities, a good ground of defence.

That unmarried females who have conceived are much more likely to
have still-born children than those who have become impregnated in the
married state, is well known.   Sorrow, anxiety, shame, and an over-
whelming mental depression at her condition, sufficiently explain why the
unmarried woman should be exposed to greater risk during pregnancy
and parturition than the married.   This is a question which it is by no
means unimportant for the medical jurist to bear in mind, since, among
the unmarried, lie in general the greater number of charges of infanticide.
We have already, in a previous number, (No. VII. p. 235,) alluded to this
subject; and have there given some statistical tables relative to still-
births.   We are glad to be able to add to these the observations of
Professor Jörg, in Leipzig, during the years 1835-6.

" In 1835 there were born 1131 legitimate and 249 illegitimate children.   Of the
former 45, and of the latter 28, were still-born.   In the year 1836, there were 1135
legitimate and 242 illegitimate births.   Of the former 52, and of the latter 18, were
still-born.   In the first year the number of illegitimate still-births was at its maximum,
in the second year at its minimum degree; for, in 1835, one illegitimate child was
still-born in $8\frac{25}{28}$ births; and, in 1836, one in $13\frac{8}{18}$.   The ratio of still-born among legi-
timate births was, for 1835, one in $25\frac{6}{45}$; and, in 1836, one in $21\frac{43}{52}$." (p. 22.)

It will be seen that these conclusions very closely approximate to the
numbers given in the tables to which we have already alluded.

Dr. Jörg has divided his work into two parts.   In the first he treats of
responsibility in the *pregnant* state, and in the second of responsibility
as it affects a female during *parturition*.   In the outset he does not hesi-
tate to announce that his object is to put forward all the resources of
science in the defence of unmarried females, who may, while thus
situated, become the subjects of criminal charges: "This book," he
observes, " is intended to show how far the resources of obstetric sciences
are adapted to set aside accusations made without sufficient grounds
against unmarried females during pregnancy and parturition, or to dimi-
nish or entirely remove responsibility for their acts." (p. 44.)

In the second chapter the author proposes the question :   Whether a
female can become conscious of her pregnancy from her own feelings
without communication with others?   This question, put in various
forms, has received much attention from medical jurists, and has been
differently answered.   Conception, as it is well known, takes place inde-
pendent of the will both of the male and female; and, although certain
feelings in the female have been said to indicate conception, yet the best

informed observers put no trust in these. Women often become preg-
nant without being in the least aware of their condition; and several
months may pass before they are convinced by their feelings, that they
are actually pregnant. The frequent mistakes made by females in mar-
ried life, and by those who have borne children, show how difficult it is
for a woman to know whether or not she be really pregnant; and, *à for-*
tiori, the difficulty will be greater where the female is unmarried, and
has become so for the first time. It is not our intention to follow the
author through his examination of the signs of pregnancy: this is the
less necessary, since a recent examination of the work of Dr. Montgomery
on this subject has enabled us to lay before our readers a summary of
the best modern opinions on the changes induced by the pregnant state.
It has often been laid down as a medico-legal axiom, that a woman who
has exposed herself to the causes of conception, ought to be aware of, or
at least prepared for her pregnancy. Jörg combats this opinion;
because, he says, " it can never imply a *certainty* of knowledge, on
the part of the woman, while many of the criminal charges brought
against her rest upon her having a certain knowledge of her condition."
(p. 44-45.)

In speaking of the signs of pregnancy, the author does not seem to be
aware of the observations of Dr. Montgomery, relative to the changes in
the colour and development of the areola around the nipples. The
swelling of the breasts and the secretion of the milk are the only condi-
tions to which he looks, contending that diseases of the uterus and ovaries
may give rise to similar changes. The symptoms of quickening and the
subsequent motions of the child, are also dismissed as in themselves
inconclusive. Numerous morbid causes may lead to a suspicion of
quickening, while the motions of the child may from position and other
circumstances be unperceived or unnoticed. Auscultation is a most
excellent aid for the detection of pregnancy; but this applies only to its
use in the hands of medical men. A woman who is unable to discover
that she is pregnant by her feelings is of course unable to acquire any
knowledge of her condition by her ear. In relation to the question pro-
posed, our author after having examined every sign of pregnancy as it
affects a female, comes to the conclusion that " a woman may for a very
long period, even until the access of parturition, be unable to acquire
from her own feelings any *certain knowledge* of her pregnancy." (p. 79.)
He then recommends the adoption of some plan by which unmarried
females, who are pregnant and advanced to the seventh or eighth month
of gestation, may be induced to submit to medical examination and have
their wants provided for. A system of espionage on the part of mid-
wives officially appointed might, he thinks, be adopted with advantage.
The author gravely adds:

"If an unmarried female, whose *external appearance*(!) leads to a suspicion of
pregnancy should refuse to submit to an examination by the appointed midwife, the
law ought to arm the latter with sufficient power to enforce it; since the only possible
way of ascertaining whether a woman be or be not pregnant, is to make her undergo
an examination by an experienced person." (p. 83.)

This plan, it appears to us, comes somewhat singularly from one who
has just been using the strongest arguments to prove the uncertainty of
the outward signs of pregnancy. A midwife in a village or town is to

judge from *external appearance* what unmarried females may be pregnant or not; and the law is to compel them to submit to an examination under the dictation of a woman, who may, without any great imputation on her acuteness, be mistaken in nine cases out of ten! Dr. Jörg seems to have forgotten what is a notorious fact, that unmarried females who are pregnant, take every means to conceal external appearances; and so effectually do they succeed in this, that they are often actually delivered in the houses of persons who have seen them daily at their work without entertaining the least suspicion of their being pregnant. Besides, even were this not the case, numerous diseases in unmarried females put on the external appearance of pregnancy; it does not, however, appear that any rules are laid down to enable the midwife to distinguish a prominence of the abdomen depending on morbid causes, from one due to the presence of a fœtus in the womb!

Most medical jurists will agree with Jörg, that a pregnant unmarried female may remain for a long period ignorant of her condition; and, indeed, that in some instances she may acquire no *certain knowledge* of it until the time for parturition approaches. Many unmarried females, however, notwithstanding that ignorance which Jörg alleges to exist among them, will have good reasons to suspect their condition long before the termination of their pregnancy; and if even suspicion existed, this would assuredly lead a woman, whose intentions towards her offspring were innocent, to prepare for what common sense would show to be a natural contingency. We cannot join the author in thinking, that before criminal charges are urged against unmarried females, it should be proved that they had a *positive knowledge* of their actual state. Many females in married life, even with the aid of an accoucheur, do not always acquire this certainty of knowledge until parturition commences. It is absurd then to contend for a kind of proof, not only, morally speaking, unnecessary, but medically impossible to attain. Indeed, it is tantamount to affirming, that criminal designs ought never to be imputed to women thus situated; a doctrine which, however humane, is inconsistent with the rules of civilized society.

The physical and moral changes induced in the female system by pregnancy are next considered. The singular desires and feelings which sometimes manifest themselves in pregnant women are portrayed, and their origin ascribed to the sympathetic stimulus exerted on remote organs by the enlargement of the uterus and development of its contents. It is not our purpose to dwell on these, nor on the presentiments of misfortune or death which so often beset females under these circumstances. In relation to the question, how far responsibility is diminished by *these changes* in body and mind he observes:

"That in some instances they may be such as to mitigate, and in others entirely to remove responsibility. The oppression of mind and body which exists in married females when pregnant, will be aggravated in the unmarried woman's by remorse, shame, the fear of ill-treatment, the consciousness of poverty, and abandonment by her seducer. Under such affliction, the mind may become so disturbed as to lead to the perpetration of some immoral or unlawful act, for which we may find palliation when we can trace it to the operation of fear or irrepressible melancholy. In fits of syncope, asphyxia, and convulsions, to which pregnant women are subject, all consciousness is lost, and responsibility for their acts must here cease. A serious question might arise, as to how long before or after the attack the free exercise of reason

was suspended, more especially when a woman has borne a child while suffering under any of these conditions. This is a case in which a charge of concealed birth or of wilful abortion might be raised against the woman, and one which she would not have it in her power easily to rebut." (p. 116, *et seq.*)

We consider that the author lays too much stress upon the psychological changes induced by pregnancy. The desires of pregnant women are commonly of a very harmless nature; they do not manifest themselves by acts of murder, incendiarism, or other crimes endangering the peace of society. In the unmarried we but too often see the morbid melancholy leading to the commission of suicide, a circumstance to which Dr. Jörg does not refer; his object being to exculpate these unfortunate beings from crimes committed against others, a case which is however so rare, as not within our knowledge to have called for the assistance of a medical jurist. We of course except the crime of infanticide, which refers to the *parturient* and not to the pregnant state.

The fourth chapter introduces us to a curious disquisition upon how far human attributes and human rights apply to the fœtus in utero. Dr. Jörg complains that " neither medical nor legal writers have sufficiently considered the peculiar and circumscribed life enjoyed by the embryo, nor the wide difference which exists between the born and the unborn child." After having traced the development of the embryo, and shown how closely it is dependent on the mother for continued existence and growth, he candidly states his opinion that the human fœtus is to be regarded only as a higher species of *intestinal worm* (p. 138 and 146); that while in the uterus it is not endowed with a human soul nor is it entitled to human attributes ! (p. 148.) The contrary opinion is set down as a wild fiction, taken up, it is true, by the majority of jurists and physicians, but without sufficient grounds, and contradicted by the whole history of the uterine development of the child.

This singular doctrine, it will be remarked, is not far removed from that of the ancient Stoics, who regarded the child as only acquiring a soul and the rights of a human being when it had performed the act of respiration. The fœtus in utero was treated as *pars viscerum matris.* A natural result of this opinion, was, that wilful abortion could not be regarded as a crime; and that it was just as innocent a matter to expel this intestinal incumbrance by artificial means as if the question related to the expulsion of the contents of the bowels. We do not find that Dr. Jörg carries his views exactly to this extent; but the inference is plain: if his views be correct, wilful abortion is neither criminal nor immoral, and the statute books of all civilized countries are disgraced by a law pregnant with injustice. We shall not, however, allow him to escape by an evasion of this kind; for the real question is not how far he himself chooses to carry his doctrine, but to what extent it may be legitimately carried. That he has anticipated considerable opposition to his opinions on this subject is plainly expressed in the preface, where he begs those of his readers, who in spite of his reasoning still hold to what he regards as a prejudiced view, " to examine in some anatomical museum the ovum with its membranes, and say whether from its appearance it has a claim to be considered a human being." (ix.)

Among the reasons for the adoption of this opinion we find the following set forth by the author, " that there is no direct sanguineous commu-

nication between the mother and child (p. 120); that the abdomen of a
female is too confined a cavity for a human being to be formed in; that
its organs are imperfect and only adapted for a future use; that it enjoys
only the restricted life of a water-worm (p. 126); that the membranes in
which it is placed constitute an essential part of it; and that human attri-
butes, if applied to the child, ought equally to be applied to the mem-
branes without which its life cannot continue (p. 127-143;) that, while in the
uterus, it only receives chyle and oxygen through the blood of the mother;
that, from its situation as well as its low and defective organization, it
cannot receive any mental impression; that, of all the senses, taste and
feeling are the only two which it can be considered to possess, and these
in an imperfect degree. (p. 140.)"

We find here some facts enumerated well known to physiologists, and
proving nothing more than that the development of a human being is a
slow and gradual process, and consists of a succession of stages, between
any two of which it is impossible to draw a line of demarcation. We
cannot see how the rights of humanity in a child should be made to
depend upon whether there be or be not a distinct anastomosis between
the blood-vessels of the uterine and fœtal portions of the placenta! We
do not understand what is intended by the assertion that the female
abdomen is too *confined* a space for the formation of a human being;
since human rights are not regulated by the size or weight of a human
being. When the argument is made to rest upon the fact of the fœtal
organs being *imperfect* and adapted only to a *future* use, we must beg
the author to remember that male and female children are born with
sexual organs which possibly, at birth, he would pronounce to be as im-
perfect in regard to the generative function as the lungs of the unborn
child are in regard to the function of respiration. The organs are
destined for a future use, but what has this to do with the rights of huma-
nity? The placenta and membranes, because necessary to the existence
of the fœtus, are held to be a substantive part of the being, and entitled
to the same attributes; but this is a piece of sophistry which would easily
be exposed by a tyro in physiology. The placenta and membranes are
the media through which the unborn child derives existence, as air and
food are the media through which the life of the born child is supported.
A child will die if the connexion with the placenta be destroyed, just as an
adult will perish when the access of air and food is cut off: but because
these are undeniable facts, are we to confound the media through which
existence is supported with human existence itself? The answer is one
as much of common sense as of physiology; and no sound moralist or
legislator has hitherto thought of denying or granting human rights,
according to whether the being derived its support through the blood of
its mother or through the air and food received into its body after birth.
Lastly, it follows, if because the senses are shut up and there are no
mental impressions while the child is in utero, it is not to be regarded as
a human being, Professor Jörg would only be consistent in excluding
from this title all those children that are born idiots or deaf and blind.

We should not have occupied our space in exposing such palpable
fallacies, were it not that Professor Jörg is a man who has earned in some
sort, and deservedly, a European reputation; and whose opinions are
therefore likely to be diffused and adopted by a certain class of readers.

We shall now take the liberty of stating why the most eminent jurists, legislators, and physicians, hold an entirely different opinion to that which he has chosen to adopt; and why in all civilized countries such an opinion is made the basis of legislation in respect to wilful abortion. A regard to the perpetuation of the species, and to the dangerous consequences which so frequently fall on the mother, has induced legislators to visit wilful abortion with punishment, and to endeavour to check it as a crime. These reasons we may consider to be certainly sufficiently strong for legislative interference, whether we regard the child in utero as a human being or not: if jurists in general adopt the former view, it is not, as the author supposes, merely because the fœtus will afterwards become a human being, but because neither reason nor justice will allow them to restrict or limit the period at which a child should acquire the legal rights belonging to its species. He, somewhat superfluously as it appears to us, combats this presumption, by asserting that numerous fœtuses do not live to assume the rights of humanity, but die before or during the act of birth, while many others are born deformed and misshapen. The law has sufficiently provided for these cases; but, in the mean time, it will not consent to treat the child in utero as not human, because all children are not born alive, nor as incapable of inheriting or of having property assigned to it, because some children are born deformed. A *human being*, according to Jörg, is that which is born or has breathed: but most legislators hold, and we consider rightly, that the child *immediately before birth* is as much an object of protection by the laws of society as one which is actually *born*. In either case the being is dependent for the continuance of its existence not upon its own exertions, but upon support derived from extrinsic sources. The difference between a child immediately *before* and *after* birth, upon which the author lays so much stress as a point in which all jurists err, is not to our apprehension greater than that which we see between a child at birth and an adult man, whose mental and bodily powers are in the fullest degree developed. If then this be admitted, where are we to draw the pretended line of distinction between the unborn child at the ninth month and the embryo? It cannot be done. Uterine life, like extra-uterine life, consists of an infinite series of stages so closely allied that no two will admit of separation: nor is it correct to assert that respiration constitutes the boundary between uterine and extra-uterine life; for a child may breathe and die before it is born, or it may be born, and live, and die without respiring. Cases of this description must, we think, strikingly show the fallacy of the author's hypothesis for the settlement of human rights; and we are surprised that it did not occur to him as necessary, before laying down such an arbitrary distinction as he has done, to prove that a new-born child has stronger claims to the protection of the laws than that same child *immediately* before its birth.

We now come to an account of the subject of Abortion, which we consider to be very ably treated. Those abnormal conditions of the female system giving rise to an expulsion of the contents of the womb, especially at the later stages of gestation, are fully exposed; and we need hardly remind our readers how important it is, in a medico-legal view, to be able to appreciate these; since in most cases of unmarried females the pregnancy is concealed, and the abortion, for obvious reasons, a

woman so situated will always endeavour to conceal; facts which might
be held by the law as affording strong circumstantial proofs of guilt.
Sound medical data must here be brought to the exculpation of an inno-
cent woman. The author does not fail to point out that unmarried
females are, from the sorrow and anxiety with which they are oppressed,
more subject to abortion than the married. The action of popular abor-
tives is then considered: most of these substances are set down as inert,
or acting with such violence on the female as to cause the expulsion of
the child only at the hazard of her life. The proofs of abortion in the
living or dead are attended with more difficulty than is commonly sup-
posed. It is not often that absolute legal certainty on the point can be
acquired; and even when the fact of abortion is established, it remains
to be shown whether it arose from criminal, accidental, or morbid causes.
An examination of the child sometimes affords stronger evidence than
that directed to the person of the mother, as the presence of wounds or
contusions on its limbs or body. It ought, however, to be clearly ascer-
tained whether the wounds, if present, were inflicted before or after
death; a subject on which some sound practical remarks are offered.

After the avowal of his opinions respecting the condition of the fœtus,
we are not surprised to find Professor Jörg announcing some loose notions
regarding the laws of different countries as they affect criminal abortion.
He appears to consider it a crime rather against the health of the mother
than against the fœtus, and exculpates unmarried females who make the
attempt on themselves, on the ground " that they may not be aware of
their pregnancy, and may have taken the abortives merely to rid them-
selves of their uneasiness: that they know nothing about the life or orga-
nization of the fœtus; and that they are unconscious while adopting these
abortive measures, that they are actually destroying the life of a human
being." If, however, as gestation advances, " a woman becomes con-
vinced of her pregnancy, how is she to be aware that the child within her
womb is *regularly organized ?* Is it not possible that the abortive means
may have been actually employed by her against some indurated ovum,
or some diseased or monstrous fœtus, incapable of surviving if it were
actually born ? Besides, who is to say that the child may not have died
from the effects of fear and sorrow in the mother before the abortive
means began to operate?" (p. 224.) Such are the loose justifications
offered by Professor Jörg for the crime of abortion. We shall make no
further remark than to say, that on the one hand his hypothesis, and on
the other his humane feelings, have carried him much farther than we
imagine most reasonable persons will be inclined to follow him.

The seventh chapter is full of interest, touching upon the question of
the length of the period of gestation in a human female; a question of
such importance in relation to the legitimacy of offspring. The period
of gestation the author fixes at the 280th day after conception; and he
contends that in the human female it is not liable to fluctuation as it is
in the females of many classes of animals. (p. 236.) Gestation is limited
by the maturity of the child, and when the process advances in an unin-
terrupted manner, parturition may be expected to commence at the ter-
mination of the *fortieth week*. He does not allow that some children
are longer in reaching maturity than others; and he argues that maturity
is not dependent on the size, weight, or healthiness of the offspring, but

on the power of its organs to sustain and carry on an independent existence; an opinion borne out by the fact, that in ordinary gestation the children are as fully developed as in those cases in which gestation has extended beyond the natural period. (p. 253.)   He especially cautions us against mistaking *protracted parturition* for *protracted gestation*, a point which has not perhaps by all advocates of the latter doctrine been sufficiently attended to.   One case is mentioned by him where parturition commenced as usual at the 280th day.   The pains were weak and accompanied by remissions.   In this way labour was not completed until after the lapse of fourteen days. (p. 238.)   Doubtless a case of this kind would have been set down by many as one of gestation protracted to the 294th day.   Some diseases affecting the uterus, more particularly the cervix uteri, may also prevent parturition from being completed at the full time.   So again the fœtus may die from the efforts of the uterus at expulsion; and if the membranes be entire, putrefaction is retarded, and the child may be borne for a considerable period, sometimes for many years.   Cases of this kind are mentioned, not however from the author's personal observation. (p. 240.)   It has been often urged as an argument in favour of protracted gestation, that the frequent premature deliveries which ensue show that the duration of pregnancy is not a fixed term; but the circumstances are different.   The premature expulsion of the child is generally to be traced to some injurious influence, acting directly on the uterus or through the system of the mother.   There are many causes which operate in this manner, but there are few which tend to delay parturition, with the exception of those already mentioned.   The author for these reasons very properly censures that kind of legislation by which the duration of pregnancy is made a fixed term, as in the Code Napoleon. He shrewdly observes, that natural laws are more firmly fixed and more constantly followed than municipal.   In investigating a case of this kind, he recommends the practitioner to procure answers to certain questions which he proposes; and of which we shall say they are well adapted to the purpose intended. (p. 250.)   We must refer our readers to the volume itself for these.

The second part of the work has reference to the changes induced by parturition, and the state of the parturient female.   The eighth chapter is devoted to the details of delivery which he divides into five periods, and which we find treated in a way not differing materially from the rules laid down in most of our standard works on midwifery.   In regard to the muscular power of the uterus he observes:

" We have no rule by which we can measure the force of the expulsive pains, but if I am not mistaken, a powerful man pressing with his whole force against the head of the child at the outlet during delivery would be unable to prevent its expulsion. It is at this period when such extraordinary muscular power is exerted by the uterus, that the bones of the child are liable to be broken." (p. 281.)

In the ninth chapter we have an enquiry as to how far a child may be exposed to danger, from the mother being wholly unacquainted with the course and progress of delivery.   " An inexperienced woman," remarks the author, " is not likely to have the power of distinguishing the pains of parturition from those of colic or from pain in the bowels." (p. 293.) "Even if she should imagine delivery had begun, she would not be able to judge how far it had advanced or when it was likely to terminate."

(p. 362.)   At that period of delivery where precautions are most neces-
sary to the safety of the child, women are apt to experience a strong
desire to evacuate the bowels, and it often requires considerable firmness
and resolution on the part of the attendants to prevent them from yield-
ing to this.   Again, sometimes delivery is rapid and the pains are not
severe; a woman then who believes that the process has not actually
commenced, or that it has advanced but little may be unexpectedly deli-
vered while at a water-closet, and the child accidentally destroyed.
" These rapid deliveries are sometimes to be ascribed to disorders of the
bowels, as colic, cholera, or diarrhœa with tenesmus." (p. 309.)   It is
acknowledged, however, " that they are not very common among those
who become for the first time pregnant." (p. 310.)

We agree with the author, that in doubtful cases when a woman is
charged with infanticide, we should make the fullest allowance for her
having been unexpectedly delivered, and the child destroyed by falling
into the soil of a privy, the mother in her ignorance having mistaken the
pains of labour for a desire to evacuate her bowels; but this is so very
common and so specious a defence, that we cannot be too much on our
guard against being misled by it.   Professor Jörg does not seem to ima-
gine that children are ever intentionally destroyed in this manner; but,
as medical jurists, we must not shut our eyes to the well known fact, that
this is not only a common method of committing murder, but in general
a most effectual screen for guilt.   Let the medical witness remember,
although the circumstance is not even hinted at in the work before us,
that accident may now and then enable him to detect a guilty woman.
Thus, if the umbilical cord on the body of a child found in such a situa-
tion be *cut* or cut and tied, if the head be severed from the body or there
be incised wounds about the trunk, such a defence as that suggested by
Jörg is of course inadmissible.   In one remarkable instance, which
occurred a few years since in the west of England, the falsehood of the
woman's statement was clearly proved by the medical witness having
discovered that the umbilical cord had been cut and tied.

We next find the author laying down the axiom: " That, in general,
a female cannot be held responsible for her acts from the commencement
of actual labour until the expulsion of the child; and that during the
passage of the head through the outlet, the greater number of women
are in a state of unconsciousness and ought not to be regarded as free
agents." (p. 319.)   It is difficult to say how far such a rule should be
admitted in practice; for every criminal case must be judged of according
to its own merits, but at the same time, when severe injuries are found
on a new-born child, due allowance should be made for the temporary
loss of consciousness and convulsive action into which extreme pain may
plunge a female during parturition.   We then come to the important
question as to how long such a state may persist *after delivery*, the
answer to which must vary according to circumstances.   We can under-
take to say that, in this country, both medical witnesses as well as courts
of law invariably interpret every fact in the most favorable light for the
prisoner, to such a degree indeed as to render the serious admonitions of
Professor Jörg superfluous to the British medical jurist.   There are other
causes which, as it is well known, may lead to an attack of delirium or
puerperal mania; to these it is unnecessary to advert.

The last chapter is occupied with the *accidental* causes of the death of the child during delivery. Need we say that this part of the subject involves most important questions in relation to charges of infanticide? The attention of the examiner must first be directed to the probable age of the child. It may be immature, in which case its death may have been due to atelectasis, i. e. to a want of proper expansion in the lungs. The characters of the fœtus at different periods of gestation are well given, but present nothing novel. The author is well aware from the researches of Dr. Edward Jörg, that the sinking of the lungs is not a positive proof of a child having been born dead. Another point to consider is, whether there may not be some abnormal condition or want of development in vital organs to account for death. The author believes that a rapid and easy delivery is dangerous to both mother and child, to the latter from its tendency to induce atelectasis. On the other hand, a protracted labour with violent efforts on the part of the uterus, often leads to the death of the child. It is in these cases that the bones of the head become fractured, and that effusion of blood on the brain or cerebral congestion is likely to occur. The author believes on the authority of a case by Roederer, that death may be caused by the cervix uteri embracing the neck of a child. Compression of the umbilical cord is a well known and not unfrequent cause of death. Partial detachment of the placenta or a rupture of the vessels may also prove fatal. When respiration is established before birth, death may take place from suffocation; and the risk of this will be greater in proportion to the length of time which the child remains fixed within the outlet. So a child being born with its membranes enveloping the head, or with its mouth and fauces filled by water or mucus, is thereby rendered unable to respire. Accidental suffocation may also ensue when it is expelled in such a way that its face falls into the discharges of the mother, or becomes closely covered by the clothes. The neglect to apply a ligature to the umbilical cord, or the improper application of it, with the exposure of the child to the air of a cold apartment, is also an occasional cause of death.

We have here merely glanced at these causes, but they are very fairly discussed by the author. Perhaps he is too concise in his remarks on accidental fractures of the cranium during delivery, considering that this is a subject which has only lately called forth particular notice, and one which has an important bearing in cases of alleged child-murder.

We thus complete our review of a work, which, as the reader will perceive from our criticism, is one of somewhat unequal merit. The author sets out with a manifest bias; and, as we have seen, states his object to be that of employing the resources of science to set aside *groundless* charges against females in the pregnant or parturient state. We cannot accuse him of the *suggestio falsi*, but we must certainly charge him in several instances with the *suppressio veri*. If he intended his volume as a guide for a medical witness in these investigations, it is in many respects a signal failure; it is rather a manual expressly adapted for those advocates who undertake the *defence* of females accused of having violated the laws. All the fallacies of medical evidence are put prominently forward; ingenious explanations are invented as substitutes for ordinary medical views; while, on the other hand, scarcely a single fact is produced to enable a medical witness to give that evidence which is necessary to sup-

port an accusation. Now, if such crimes as abortion and infanticide had
no existence, we would allow the author, however we might differ from
him in opinion, the greatest merit for humanity: but abortion and infan-
ticide are unfortunately crimes of too frequent occurrence; and we hold
it to be the duty of a medical jurist not to attempt to baffle the law in its
endeavours to suppress them, but to assist by bringing forward the light
of science to detect and expose them. What should we say of an expe-
rienced individual, who, following the example of the author, collected
and published only those medical principles which would lead to the con-
viction of accused parties, carefully withholding the exceptions to these
and leaving them to chance-discovery? There might be less humanity
on the part of such a person, but it appears to us there would not be
greater indiscretion. When Professor Jörg represents himself as using
every effort to set aside what he terms *groundless* charges by the rules
of science, are we thereby to understand that all such charges are ground-
less? If not, why has he not brought forward facts to support those
which are not groundless? We consider this to be a bad example to
medical jurists; they ought, in our estimation, to be wholly independent
of the prosecutor and the prosecuted; and while, on the one hand, they
vindicate innocence, on the other, they are bound to see that the laws of
their country are not lightly violated. We shall conclude our notice
by saying that, if we except this error into which we conceive the author
has fallen, there are few modern works in which the signs of pregnancy,
abortion, and delivery are more ably treated. We object not to the
matter of the work so much as to the spirit in which it has been
written.

Art. VII.

*Medico-Chirurgical Transactions, published by the Royal Medical and
    Chirurgical Society of London.* Vol. XXI.—*London*, 1838. 8vo.
    pp. 450.

Neither the nature of this Society, nor the character of the writings
hitherto published by it, demands from us any notice in this place: both
are well known to the profession at large; and, as the contents of the
present volume are such as to claim from us considerable attention, we
shall, without further preface, proceed to their consideration.

I. The first article, by Mr. George Gulliver, assistant-surgeon of
the Guards, is devoted to the enquiry—*Whether, in cases of Necrosis,
the dead Bone admits of Removal by Absorption?* Morbid specimens
in various collections, and experiments performed by the author himself,
are alluded to, as giving a negative reply to the above question; or as,
at least, tending to show with how much difficulty dead bone becomes
subject to absorption, and that absorption cannot be regarded as the
means by which the sequestrum disappears in cases of necrosis. This, it
is observed, is contrary to the opinions of the best authorities on the
subject. Of the facts brought forward by Mr. Gulliver the following is
an example:

"A patient had anchylosis of the metacarpal bone with the proximal phalanx of the great toe. The articular extremities became necrosed, and several small sequestra were discharged, the disease having continued twenty-four years. The metacarpal bone was divided near its base with the cutting pliers, and the diseased bones removed; and the base was subsequently excised, to secure the anterior tibial artery. A blackened sequestrum, about the size of a horse-bean, was found in a cavity in the situation of the articulation of the phalanx with the metacarpal bone, where it had probably been inclosed for a series of years." (p. 9.)

There are other facts of the same kind alluded to. In the experiments of Mr. Gulliver, instituted with a view to establish the non-absorption of dead bone, small pieces of bone were kept in contact with the surfaces of ulcers and with the sinuses of setons, in the human subject, for periods varying from three to ten weeks. Pieces of bone were likewise introduced into the soft parts of the leg of a dog, into the subcutaneous cellular tissue of the same animal, and were allowed to remain a considerable time; no loss of weight being experienced. Other pieces of bone were introduced into the medullary canals of the tibiæ of rabbits, and were likewise, after detention for a considerable time, taken away unchanged.

We do not see the importance of many of these experiments as bearing on the points in question. With regard to the human morbid specimens mentioned, it may be said that they are exceptions to the rule; just as we find pins imbedded in omentum, and bullets encysted in various parts of the body and preserved in collections; although we never could infer from these that the rule was, for such and other foreign substances not to escape from the body by ulcerative absorption: and we cannot insist too much on the necessity of the greatest possible caution in drawing inferences from any analogical experiments. Can it be maintained that there is so far identity between the surface of an ulcer, or the lining of a seton, and the texture by which it is said that the absorption of sequestra is effected; that it is fair to infer from the fact that, if a piece of bone is placed in contact with either the ulcer or the seton, without any sensible diminution being effected in its weight, that *therefore* portions of necrosed bone cannot be removed by the absorbents? The experiments in which bone was inserted into the medullary canals are certainly more applicable to the question: but it may be said that, as these were performed on rabbits, and as the case was not one of necrosis, their results are by no means such as to enable us to form any very satisfactory opinion on the subject.

II. Mr. COPLAND HUTCHINSON has added some further remarks to those already communicated to the Society, *on the comparative freedom of sailors from calculous diseases.* With regard to the practical inferences derived from his observations, he adds,

"I have hitherto scrupulously forborne to offer any opinion on the treatment of calculous diseases, as the result of my extended statistical enquiry into the subject; but it may not be out of place for me here to state, that pure air, a lax state of the bowels,—iodine used internally in proper doses, and externally over the region of the kidneys,—the use of swings, either in a garden or elsewhere,—active bodily exercises, —warm clothing, such as flannel dresses worn next the skin,—and a very sparing use of vegetables, seem to me to be the remedial and preventive measures indicated in

such cases, from a careful review of the statements contained in this and my former papers.   One or more, or all of these, according to circumstances, may be advantageous, where sea-voyaging and a sea-life are impracticable." (p. 23.)

III.   Dr. Bostock has laid before the Society a plan for arranging the phenomena observed in examining urine; hoping that, if information on the subject is obtained from many sources, arranged according to a definite plan, it may lead to important practical results.   He wishes to engage the cooperation of such members of the Society as may think favorably of his plan; and we shall be glad to promote so desirable an object. The following are the headings under which he wishes the particulars of each case to be arranged:

" 1. Designation; time; quantity.
" 2. External characters; clearness; colour; odour.
" 3. Specific gravity.
" 4. Degree of acidity.
" 5. Amount of solid contents per cent.
" 6. Proportion of solid contents soluble in alcohol.
" 7. Effect of heat.
" 8. Effect of corrosive sublimate.
" 9. Amount of precipitate by ammonia.
" 10. Amount of precipitate by oxal. ammon.
" 11. Spontaneous changes."

IV.   Mr. Beaumont has described a new instrument for closing fistulæ between the bladder, vagina, and rectum, and fissures of the soft palate. He has aided the account of his instrument by a plate, which it is necessary to examine to well understand the description.   It wants the sanction of repeated trials.

V.   The next paper consists of *Facts and Inferences relative to the Condition of the Vital Organs and Viscera in general, as to their Nutrition in certain Chronic Diseases*, by Dr. John Clendinning.
In collecting the facts contained in this paper, the author has the ulterior object in view of proving, in a subsequent communication, the great frequency of diseases of the heart; "a class of diseases which," he imagines, " is the main cause of the great bulk, if not of the whole, of the sufferings and mortality ascribed by authors to numerous chronic diseases,—viz. to asthma; to chronic catarrh; to dropsy, including anasarca, ascites, and hydrothorax; to emphysema pulmonum; to chronic hepatic diseases, and to various affections denominated phthisis catarrhalis, catarrhus suffocativus, dyspnœa chronica, tussis senilis, winter cough of mature years, miliary tuberculation of the lungs, &c.; also of no small part of the gravity and fatality of acute diseases of all the great viscera in adult subjects, but more especially of those of the lungs, as well as of typhus and other continued fevers." (p. 36.)   The proofs of the foregoing statement are to follow; and we hope that, in endeavouring to maintain his position, Dr. Clendinning will give us evidence as satisfactory as any such statement must require.   The object of the present paper is to ascertain the modifications impressed on the nutritive functions in the viscera in certain chronic diseases.   We must limit our remarks to the inferences which Dr. Clendinning considers himself justi-

fied in drawing from the numerous facts collected. He remarks, with
much justice, on the uncertainty attending either visual or manual esti-
mate of the weight or size of the viscera, and he agrees with Dr. Carswell
that the best method of measuring parts in pathological enquiries is by
weighing them. The following are Dr. Clendinning's inferences from
the facts which he has collected, although he does not insist on the num-
ber of his facts being sufficient to render his inferences absolute:—1.
The healthy adult male heart averages, for all ages under sixty, nearly
eight ounces and a half avoirdupois. The healthy female heart averages
seven ounces and a half, or, more exactly, seven ounces and two fifths.
This agrees with the opinion of M. Bizot, mentioned in our eleventh
Number, that, in every series of ages, the female heart is smaller than
that of the male.   3. In phthisical subjects, the heart, in a large propor-
tion of cases, weighs considerably more than in health. We know not
how to reconcile this with the statement by Bizot, in the paper already
referred to, "that, both in males and females, the heart is smaller in all
its proportions, in tubercular subjects than in others." As the latter tends
to contradict, so do the investigations of Dr. Clendinning tend to support
the hypothesis of Laennec, Bertin, and Bouillaud, as to the agency of
phthisis in producing hypertrophous heart. Our author appears, by
having examined the weight of the viscus, to have instituted a mode of
examination more satisfactory than that of measurement by the eye or
rule; and a different mode of investigation may explain the want of uni-
formity in the inferences of the several investigators. 4. His fourth in-
ference is in accordance with that of M. Bizot, that the weight of the
heart increases with years up to the end of life, contrary to the law of
nutrition of the viscera in general. 5. Hypertrophy of the heart gene-
rally, or of the left ventricle alone, predisposes not only to visceral or
general plethora and hypertrophy, but also to acute and chronic inflam-
mations in general, and especially to bronchitis, pneumonia, and pleurisy.
6. The average weight of the brain of the healthy adult male under sixty
years of age is about 45·85 ounces; that of the healthy adult female under
sixty, about 41·25 ounces. 7. The weight, and consequently nutrition,
of all the viscera exceed the normal standard in all cases of phthisis, in
which the heart is increased in bulk or weight.

VI. *Remarks on Malignant Diseases of the Skin of the Face,* by
Cæsar Hawkins, constitute the next paper: it is a valuable one, and
we shall therefore condense it for our readers. By malignant diseases
Mr. Hawkins means such as essentially possess a new structure, and are
capable of exciting a poisonous influence in one or more of these several
modes: 1, on the *neighbouring textures;* 2, upon the *absorbent system;*
3, upon the *whole constitution.* By this restriction of the term malig-
nant are excluded, 1, the irritable ulcer described by Mr. Earle in the
twelfth volume of the Society's Transactions; 2, the various forms of
scrofulous disease which attack the nose, eyelids, and cheeks; 3, the
several varieties of tubercular sebaceous disease; 4, hypertrophy of the
skin of the nose. Malignant fungoid diseases, "in their *hematoid, me-
dullary,* or *melanoid* varieties," seldom occur in the skin of the face
until they have been formed in other parts: but the class of scirrhous or
cancerous complaints are very peculiar when occurring in the skin of the

face, and differ in many respects from what is usually called cancer. Cancer of the skin of the face is seen in three different forms.

1. *The common cancer of the face.* With this, as it shows itself in the lower lip, most surgeons are familiar: it commences generally by a little hard tubercle in and beneath the cutis, the ulcer which takes place in it being covered from time to time by a thin scab. A deep excavated ulcer succeeds, with characters which it is unnecessary to describe. When *common cancer* occurs in other parts of the face, it presents the same characters as when occurring in the lip. Complete removal of the whole of the diseased structure is well known to be the only remedial means which offers any hope of getting rid of the disease.

2. The second form Mr. Hawkins designates "*cancerous ulcer,*" or "phagedenic ulcer of the face of old persons." He believes its usual origin to be a flat, brownish tubercle, generally situated in the angle between the cheek and ala nasi, or in the inner canthus of the eye, which is frequently stationary for a long time before some accidental violence induces ulceration: this tubercle is softer, flatter, and darker than that of common cancer, as if it implicated the outer texture only of the cutis, including the coloured rete mucosum. The ulcer has a dark shining appearance, with slight elevation of its edges, which are jagged and irregular, and the skin around it is not thickened nor inflamed as in ordinary cancer; from the ulcer of which it is also distinguished by the trifling pain which accompanies it, by the absence of hemorrhage, sloughing, and fungus, and by its very slow progress; many years sometimes elapsing before very extensive ravages have been committed by it, during which time the ulcer sometimes remains nearly stationary for a time, or becomes covered by a thin skin, in which the vessels of the subjacent texture are visible; and in these intervals of rest the new structure at the edges diminishes in thickness. In a more advanced stage of the disease, when the ulcer has opened into the cheek or malar and maxillary bones, its difference from ordinary cancer is evinced in the most remarkable manner, by the little disturbance which it causes in the general health, and by the entire absence of contamination (as far as the author is aware) in the absorbent glands. For this disease Mr. Hawkins prefers the term *cancerous ulcer* to lupus or lupoid tubercle, as it is sometimes termed; as indicating the scirrhous nature of a new structure, possessing a malignant influence upon every texture in its neighbourhood, yet inferior to common cancer in the degree of malignancy, since it does not contaminate the absorbent glands. Mr. Hawkins considers that removal by the knife of either the tumour or the ulcer is the best treatment; but, in a broad flat ulcer, without any depth of new structure, he employs the chloride of zinc, which he has frequently used without any of the injurious effects of other caustics.

3. The third form may be called the *cancerous tumour,* or *fungous cancer of the face of old persons*, and Mr. Hawkins is not aware of its ever having been before described. Its early stage is a small round or oval tumour in the skin, generally in the cheek, or over the malar bone, or on the ala nasi. It is nearly of the natural colour of the skin for a long time, or is a little whiter, from the outer part of the cutis being thinned by the growth of the tumour, so as to allow the colour of its interior to shine through it. When cut, the tumour appears white, solid,

but not very firm, with a well-defined margin, separate from the rest of the skin, and where it projects below the cutis it is covered by a kind of cyst. The tumour is more globular, soft, insulated, and distinct, more completely confined to the texture of the skin, more elevated and less liable to become puckered than ordinary cancer of the skin of the face, and less liable to have lancinating pain before the ulcerative stage has begun. It is more elevated and circular, of a whiter colour, more abrupt at its margin, and extends deeper into the substance of the cutis than the tubercle of the *cancerous ulcer*. It has fewer vessels ramifying on its surface, and has none of the livid colour previous to its ulceration, of fungus hæmatodes, nor of the darkness of structure of melanosis, and its texture is firmer and more organized than that of medullary tumours. It is distinguished, too, from all these by its being single, and by the length of time that it remains stationary. If it forms upon the nose, it is easily distinguished from the tumours of hypertrophy of the ala nasi by the absence of surrounding redness and thickening, by its defined cyst-like limits, and by its having none of the enlarged sebaceous follicles observed in that disease. The tumour grows thus smooth, globular, and nearly unattended with pain, to the size of a nut or of a walnut, before it excites apprehension in the patient's mind. At last it is pricked or irritated, or ulcerates spontaneously, and there arises a mass of healthy granulations from the surface, which spread out considerably beyond the tumour, over the surrounding skin, to the height of an inch or more, with a copious discharge of healthy pus, without fætor and without sloughing or bleeding, and not even now very painful. The tumour at the basis of these granulations increases in depth and in diameter, but is free for a long time from any attachment by altered cellular texture to the subjacent parts, so as still to allow of removal with every chance of success. The circular prominent fungus of this disease appears very different from the soft irregularly formed granulations and the excavated ulcer with everted margins of the *common cancer*, and from the flat, dark-coloured surface, destitute of granulations, of the *phagedenic ulcer;* neither has it any resemblance to the bleeding sloughing surface of *fungus hæmatodes*. The tumour grows to a considerable size before it alters its character, and before the general health suffers much. After a time ulceration extends more deeply into the tumour, and its projecting appearance is lost; the bones and deeper parts become rapidly changed into the new structure, which in some parts is gristly like scirrhus, but in others is softer and more pulpy, like some cases of medullary disease of the bones. The ulcer in this stage is also somewhat intermediate in character between these two diseases. In its third stage of advanced ulceration, the cancerous tumour becomes more like common cancer of the lips and face; but there is more tumefaction round and beneath the ulcer; the edges are less curled and hardened; the discharge is healthy purulent secretion, instead of offensive watery and sanious fluid of a peculiar odour; and there is much less disposition to bleeding and sloughing. In malignancy it is intermediate between the cancerous ulcer and the common cancer; admitting therefore of removal by the knife, if sufficient care be taken to excise the whole, with more chance of the cicatrix remaining sound than in ordinary cancer; in fact, with almost a certainty of success, where it has not attained a great magnitude.

VII.   Mr. G. MALCOLMSON has communicated a paper *on a peculiar Symptom occurring in some Cases of enlarged Liver*, which he describes as "a loud sound (as heard through the stethoscope), between a crepitous rattle and a bleating, and accompanied by a vibration of the parietes of the thorax, communicated to the hand applied to the part."   In another part of the paper this sound is spoken of as "partaking of the character of a bleating and of an ordinary respiratory murmur."   In one case it is said that such a sound was caused by the thin edge of the lung being compressed against the costal pleura by an enlarged liver.   The same symptom, it is observed, occurs from simple enlargement of the liver; and a knowledge of it may be of use, both in relieving the mind of the sufferer and in directing the practice in certain obscure cases.   Mr. Malcolmson mentions a case of enlargement of the liver, where he was able, "by placing the patient in a sitting posture, to remove the symptom, and to let the lung descend a little further into the chest, and, by pressing the liver forcibly upwards, again to produce it."

We regret that we have not space for some valuable remarks on hepatic abscess, but must refer our readers to the volume.   We are happy to find the author recording his opinion of the injurious effect of employing mercurial medicines when it is known that abscess in the liver has taken place.

VIII.   Dr. JOHN WILSON has described various cases of *Nervous Affections peculiar to young Women, causing contraction of the muscles of the extremities, accompanied by increase, diminution, or absence of sensation or motion.*   "The cases have been taken from the case-book in the order in which they occurred, without any selection, except in omitting those cases of less severity which, in general, much sooner terminated favorably."   They will not admit of abridgment with advantage.   They belong to diseases very little understood; and to acquire an acquaintance with which is, from the moral as well as physical nature of the subjects of them, a very difficult task.   Dr. Wilson, perhaps wisely, attempts to form no theory for their explanation; and his treatment, on the whole, appears to be guided by no principle but perseverance.   "In the cases related the women were all young, (from eighteen to twenty-six years of age,) generally in good health and of strong constitutions; all of them were single, and many of them subject to violent hysteric fits.   In the four most obstinate cases the functions of the uterus were regular; in others the bowels were confined, and in four of them obstinately."   Any one familiar with the female wards of a large hospital will recognize the cases to which the following symptoms belong: Pains, of various kind and degree, in all parts of the body, fixed and shifting, attended sometimes with the greatest sensibility to the least touch; affections of sight; tinnitus; various degrees of affection of the muscular system, paralysis, contraction of the limbs, and stiffness of joints, with or without change of common sensation; symptoms more commonly regarded as hysteric, some or all of which symptoms have been treated by copious bleedings, leechings, and blisterings, without any or with but temporary relief.   To these various symptoms, occurring in young females, Dr. Wilson has applied the following means. We give them "en masse," because, excepting where, as in the case of purgatives, the indication was obvious, it is not evident

on what principle much of the treatment was employed: Acupuncture, moxas, blisters, sinapisms, euphorbia plasters, cupping, cold shower-baths, douches, purgatives, turpentine enemata, creosote, hydrocyanic acid, iron, forced extension of the contracted limbs, kicking, &c. &c. Dr. Wilson remarks on the frequency with which these nervous females mistake the causes of their symptoms; and it is unnecessary to repeat what he says of their various tempers during the progress of treatment. We recommend his paper to an attentive perusal; but these cases, of all others, are perhaps the least to be understood from books.

IX.   The next paper is an unquestionable instance of *a secondary occurrence of Measles in a child*, æt. 22 months, three months after the first attack; the symptoms being in each case unequivocal.   The case is reported by Dr. Joseph Moore.

X.   Mr. Travers has lately removed the *Clavicle with a Tumour situated in it.*   The case is of a boy, æt. 10, on the centre of whose collar-bone a firm but not painful swelling, the size of a hedge-nut, was discovered in the summer of 1836.   It was supposed to have originated from a blow received about ten days previously.   Leeches and cold lotions were used, but the tumour grew, and, when Mr. Travers first saw it, was oval-shaped, about as large as a pigeon's egg, firm but elastic, and painful only when compressed.   It gave the idea of a false joint after a central fracture, or at least of a cyst enclosing the broken and ununited portions of the bone.   The tumour slowly increased in spite of remedies. May, 1837, the base of the tumour, from its scapular extremity, occupied full three fourths of the bone; about two-thirds of its circumference was supra-clavicular, so that, in the erect position of the body, it was seen by a person standing behind the patient over the fall of the trapezius.   The skin had a purple hue, from a congestion of the superficial purple veins, but there was no sign of pressure on the blood-vessels or nerves of the arm.   About twelve months from the date of its commencement the disease was removed, and the operation is thus described:

" The little patient being recumbent, with his shoulders raised and head slightly averted, a crucial incision was made through the integument and platysma myoides, one limb of which was nearly in a line with the clavicle and the other at right angles; and the flaps and facial coverings successively dissected down to the external basis of the tumour.   The pectoralis and deltoid muscles were then carefully detached from their clavicular origin, avoiding the cephalic vein, and the fibres of the trapezius and cleido-mastoid muscles divided on a director.   One considerable vessel, in the situation of the transversalis humeri, required a prompt ligature.   The circumference of the tumour was now well defined, though it was found to be firmly imbedded, and adherent on its posterior aspect.   Disarticulation of the scapular extremity of the bone was next effected without difficulty, and the mobility thus communicated to the mass facilitated the completion of the operation.   A director was now worked beneath the bone, as near to the sternal articulation as was practicable, and, with a pair of strong bone-nippers thus introduced, it was completely and clearly divided.   The subclavius muscle and a part of the rhomboid ligament were now detached from the tumour, and the mass being well raised by an assistant, while the edges of the wound were kept wide apart by metallic retractors, the cervical prolongations of the tumour were separated from their remaining connexions by a few touches of the scalpel, without injury to the subclavian vessels.   The operation occupied some time, but the

boy displayed good courage as it proceeded: very few vessels were tied, and the loss of blood did not exceed twelve ounces." (p. 137.)

Recovery was very satisfactory. There is scarcely any perceptible falling forward of the shoulder, nor any restriction of the motions of the arm: he elevates it perpendicularly over his head, extends it horizontally, carries and rotates it behind the trunk, and performs the same extent and variety of circumduction, and with equal promptitude and power as the parallel movements of the other arm. The production of bone from the truncated sternal extremity of the clavicle extends at least two inches, and terminates beneath the centre of the cicatrix in a firm ligamentous band adherent to the skin.

The tumour presented anteriorly a regular curvilineal surface, posteriorly it was irregular. A dense fibrous expansion invested it on all sides, and, from the puncture of the principal cyst during the operation, a dark grumous fluid escaped. Its interior was composed of cells of nearly equal dimensions, filled with dark, solid coagula of blood; the scalpel grating, as it passed, upon particles of osseous matter. One larger cell was without a clot, having been filled with the dark fluid blood before mentioned. The investing membrane was condensed periosteum, the cells were irregularly expanded cancelli, and the calcareous particles were the debris of the bony plates and walls. The occurrence of the tumour Mr. Travers is disposed to ascribe to the blow.

There are four other cases of removal of the clavicle on record; one for caries, and three for osteosarcoma. All were attended with a successful result; one only having died of pleurisy, consequent on exposure too soon after the performance of the operation. We cannot forbear quoting the following interesting remarks, which arise out of the subject of injury to bone.

"There can be no doubt that injuries, more serious in their consequences than those of fracture and displacement, are often inflicted upon bone; as when adhesive (i.e. ossific) inflammation, the only healing process of which bone is capable, is prevented by the circumstances of the injury; or, on the other hand, is set up in preternatural situations or in morbid excess. Sometimes a bone is killed outright, sometimes disorganized only in part, by a blow or fall; and the particular circumstances which in such cases determine the separated periosteum, or the deranged cancellary membrane, to secrete bone or to secrete pus, to generate osteo-sarcoma or the medullary fungus, are not merely local but constitutional. The differences which induce in one case interstitial ulceration (caries), in another progressive ulceration or detachment from the living margin (exfoliation), in a third a process of renovation simultaneous with the disorganizing process, or a transfer of the nutrient action from one set of secreting vessels to another, at the expense of the original structure (necrosis): all these differences lie open for investigation under the general head of diseases of the bone from mechanical violence, apart from section, fracture, and displacement. They have hitherto escaped description, if not notice, under this head, being for the most part produced by causes apparently so inadequate and indirect as to evince a morbid state of the constitution in the individual. The following categorical summary I think my own experience will enable me to verify; the records of surgery will do so abundantly. 1. Periosteal inflammation and bony accretion or deposit upon the surface of the bone, with and without previous suppuration. 2. Inflammation terminating in abscess of the periosteum or cancelli. 3. Inflammation and ulcerative interstitial absorption of the bone (caries). 4. Rupture of the periosteal vessels and partial absorption of the bone, or rupture of the blood-vessels of the cancelli, and extravasation and absorption of the entire bone. 5. Osteo-aneurism, or aneurism of the capillaries within the bone. 6. Death and

exfoliation of a portion of the bony shell.   7. Disorganization and separation by
ulcerative progressive absorption of the entire shaft, after the deposit of a periosteal
shell (necrosis).   8. Disorganization and death of a defined portion of the entire
cylinder of the long and entire substance of the flat bones, and consequent external
abscess.   9. Exostosis, periosteal or medullary, or osseous tumour of the long and
flat bones.   10. Spina ventosa, or inflammatory and sanguineous deposits in the cells
of the articular extremities of bones, irregularly expanding them, and ultimately re-
ducing the walls of the bone to a network, crackling upon compression.   11. Osteo-
sarcoma, or cartilago-osseous tumour of the periosteum and surrounding textures,
secondarily implicating the bony and contiguous soft structures.   12. Malignant or
medullary and hæmatoid fungus of the cancelli, and deposit of new septa or new
exterior shell." (p. 145.)

XI.   Mr. ANCELL has described *a Case of universal Purulent Depo-
sition into the Joints, with Separation of the Epiphyses; occurring as a
sequel to Small-pox.*   It is a well-marked case of a rare disease.

XII.   The next communication is *a Report of Twenty Cases of
Malignant Cholera, occurring in the Seamen's Hospital-ship, the
Dreadnought, between the 8th and 28th of October,* 1837; by Dr. BUDD
and Mr. BUSK.   To give at all a useful analysis of this paper would
occupy so much space that, however reluctantly, we must pass it over.

XIII.   The next is *on Aneurisms of the Heart, with Cases,* by JOHN
THURNAM.   This is a very valuable and elaborate essay on the subject,
the author having derived his information from every accessible source
which appeared to be deserving of credit.   There appears to be no in-
stance on record of the right ventricle being the seat of aneurism; a fact
which has been variously explained.   The less perfect closure of the
auriculo-ventricular opening on the right than on the left side (a fact
which has been long admitted) will serve, in part, to account for the im-
munity from aneurism possessed by the right ventricle : but, in addition
to this anatomical or mechanical peculiarity, Mr. Thurnam considers
that, from the right cavities of the heart being the centre of the venous
system, and partaking of the characteristics of that system, they cannot
be the seat of aneurism : and, in support of this view, the author men-
tions it as a remarkable fact, that there is not on record a single authentic
case of lateral or sacculated aneurism of the pulmonary artery.   A defi-
nition of aneurism, founded on the above views, is as follows: " *an
abnormal dilatation of a portion of the vascular system of red blood,
either dependent upon or necessarily connected with a morbid change in
the tissues forming the walls of the dilated part.*"   This definition ex-
cludes from the class of aneurisms all forms of dilatation of the right
cavities of the heart and of the pulmonary artery, and all general dilata-
tions of the left cavities.   We agree in the inapplicability of the term
aneurism to any general dilatation of any of the cavities of the heart,
although we are not satisfied with the reasons why the right ventricle
should not be the seat of aneurism.   The less perfect closure of the tri-
cuspid than of the mitral valve; the less force required by the right than
the left ventricle in propelling its blood through the pulmonary circulation;
and perhaps the opinion of M. Breschet, that the apex of the right ven-
tricle is stronger, in proportion to its lateral walls, than that of the left,
and consequently better able to resist distension;—one or more of these

afford sufficient anatomical reason, apparently, for the immunity of the
right ventricle from aneurism, without referring it to any hypothetical
vital peculiarities.

The history of the disease is derived by Mr. Thurnam by the applica-
tion of the numerical method to fifty-eight cases. It is met with under
two principal forms, its size varying from that of a nut to the size of the
heart itself; the opening from the ventricle into the aneurismal sac con-
sisting of dense fibrous tissue, well defined. The sacs are variously
formed; sometimes of muscular substance and pericardium, sometimes
(though but rarely) of endocardium and pericardium alone, sometimes
of all the structures composing the ventricle. These sacs are susceptible
of various kinds of degeneration; such as the steatomatous, cartilaginous,
calcareous or osseous; and they not unfrequently are adherent to the
fibrous pericardium. The contents are commonly coagula of various
forms, or the sacs are found to be empty. The thinnest parts of the
ventricular walls,—that is to say, the apex and highest part of the base
of the heart,—are those which become much more frequently than others
the seats of aneurism. Cases occur in which several aneurisms coexist.
The pathological changes most often found together with aneurism are
such as are almost universally regarded as effects of inflammation.
Hypertrophy and dilatation are likewise found with it. The disease
occurs much more frequently in the male than in the female; and after
adult age it does not appear to be confined to any particular period of
life. There is very little which is at all satisfactorily known of the causes
of the disease. In regard to the nature of the disease, Mr. Thurnam
says,

"From an examination of the anatomical details, as well as of the apparent causes
of the disease, I come to the conclusion that, in twenty-two cases out of the fifty-
eight, the aneurism originated in a dilatation of all the structures entering into the
composition of the walls of the heart; and in six in a solution of continuity of the
lining membrane and inner stratum of muscular fibres, either as a consequence of
ulceration, or, what is more probable, of rupture; whilst, in the remaining thirty
cases, the disease was either too far advanced, or the data given are insufficient to
enable us to form a satisfactory opinion on this question. I therefore conclude that
this lesion, in by far the greater proportion of cases, is of the nature of *true aneurism*;
or that it has its origin in a dilatation of a portion of the walls of the heart, which has
become less able to resist the distending force of the blood during the ventricular sys-
tole, in consequence of organic changes in the tissues composing it. In a great majo-
rity of instances, these changes would appear to have been the result of a more or less
active antecedent inflammation." (p. 228.)

A more or less decided enlargement of one of the natural interspaces
between the smaller fleshy columns of the heart, is mentioned as the ear-
liest stage of those morbid changes which terminate in the formation of
true aneurism. In one case, the author " met with a small cavity in the
centre of the interventricular septum, which was capable of containing a
small horse-bean. This cavity was evidently an enlargement of one of
the natural sulci, which have been alluded to; it was traversed by the
lining membrane of the heart, which in this particular spot was white and
opaque, and it was only separated from the cavity of the right ventricle
by a very thin stratum of muscular fibres, of a whitish appearance, and
dense fibrous texture." (p. 229.) This observation is interesting and
important; and is applied by the author to explain the mode of occur-

rence of biloculate and multiloculate aneurisms.   Although regarding by
far the greater number of cases as being instances of true aneurism,
Mr. Thurnam believes that the existence of false aneurism of the heart
is indubitable, originating in partial rupture, and perhaps (although this
is not supported by any case) in ulceration, and in the discharge of the
contents of abscesses and cysts into the cavity of the ventricle.   In
reviewing the various forms of cardiac aneurism, Mr. Thurnam concludes,
that, with the exception of the external mixed aneurism, for the non-
occurrence of which there is an anatomical cause, we find in the heart,
all the varieties of the disease, which are met with in the arteries them-
selves.   It is sufficient to say, that the symptomatology and diagnosis of
this affection are entirely unknown, and that, under any circumstances,
nothing but a probable guess could be made of its existence.

"In twenty-four cases, the mode of death is stated.   In twelve of these, in which
it was very sudden, it arose, in three from syncope; in one from an unknown cause;
and in eight from internal hemorrhage.   In six of these eight cases, the hemorrhage
was dependent upon a rupture of the aneurismal sac into the pericardium; in one,
upon a rupture of the sac into the left pleura; and in another upon a rupture of the
substance of the ventricle itself, in the immediate neighbourhood of the sac.   In four
cases, the patients appear to have died from an apoplectic or paralytic affection, and
in one from epistaxis.   In three cases, the mode of death was by asphyxia, and this
was probably the case in six other instances.   In six cases, as well as in the four apo-
plectic cases, death was evidently the result of complication with other diseases."
(p. 237.)

Aneurism occurs in the left auricle, but much less frequently than in
the corresponding ventricle.   The valves of the heart are also sometimes
the seat of dilatations, "which may properly enough be styled aneu-
rismal."   To these we cannot at present do more than make the above
reference.

XIV. *History of a Female who has four Mammæ and Nipples*, by
Dr. Lee.   We noticed this case in a former Number, Vol. V. p. 585.

XV. Dr. John Wilson's paper, on *the Results of Poisoning by Sul-
phuric Acid* is short, and contains only two cases: they have not much
novelty.

XVI. If subsequent experience should confirm Mr. Henry Hunt's
observations *On the Use of Arsenic in some Affections of the Uterus*, he
will have the merit of calling the attention of the profession to a valuable
remedy. Mr. Hunt's attention was first attracted to the subject of the in-
fluence of arsenic on the uterus by the pain attending a case of cancer uteri
having been greatly relieved, when the constitutional effects of arsenic were
produced in the system, by the use of the liquor arsenicalis.   The phy-
siological action also of arsenic on the generative organs further called his
attention to this remedy, and afforded him a means of explaining the
action of the medicine in disease.   Various forms of diseased function of
the womb appear to have been much relieved by the continued use of
arsenic.   Several cases are related and are well worthy of perusal.   The
first of them are cases of irregular and profuse menstruation, without
inflammation or organic disease of the uterus, the excessive flow of the
uterine discharge appearing to be the consequence of exhaustion.

Immediate and progressive improvement followed the use of the arsenic; and that such improvement was fairly attributable to the medicine is inferrible from the fact, that in three cases, the disorder had previously resisted every remedy that had been employed: in another case, "the immoderate discharge was arrested whilst taking the arsenic the first time, but returned soon after it had been left off, and was again immediately and permanently checked by resuming it." We think the following case well worthy of attentive consideration; knowing the difficulty which frequently attends all attempts to treat successfully cases of such a character.

"Mrs. Burne, æt. thirty, married but never pregnant, was labouring under the following symptoms in June 1837. A constant pain with heat, varying in severity, in the left groin and under the pubes, and bearing down, which was much increased by walking, standing, or sitting upright, by a costive state of bowels, or by the action of purgative medicine. She was easier in bed or reclining on a sofa, her urine was sometimes high coloured, at other times pale, her pulse rather quickened. On examination, per vaginam, the uterus was found to be tender and rather tumid. She attributed her disorder to the menses having been suddenly checked by exposure to cold three years before. She had consulted many medical men, who had bled her generally and locally, and always with temporary relief; purgatives, opiates, the warm and cold baths, and numerous other remedies having been employed without any lasting benefit. Thinking this to be a case of chronic inflammation of the uterus, I confined the patient to her bed, and, for six weeks, kept her under the influence of a mild course of mercury, with nitre and colchicum. While she remained in bed she was easy, but the pain returned with equal severity immediately on her leaving it and taking exercise. I then sent her home, and directed a pill with one twentieth of a grain of arsenic to be taken three times a day, which she continued four months, at the end of which time, the pain, which had gradually decreased after she had taken the pills six weeks, entirely ceased. She now attends to the active duties of a bake-house, and only suffers pain about the time of her menstruation. This case may perhaps be considered similar to those described by Dr. Gooch, as the irritable uterus." (p. 283.)

The next case described is one of neuralgia of the face, occurring at the menstrual period, and apparently connected with irritation of the uterus. The neuralgia was relieved by the arsenic, as is frequently the case with neuralgia quite unconnected with uterine disturbance. The cases related by Mr. Hunt, appear so certainly to indicate that arsenic possesses a beneficial action in certain morbid conditions of the womb, that we have much pleasure in being the means of bringing it more under the notice of medical men, hoping that it may be found of more extensive applicability than to the cases mentioned by Mr. Hunt. The quantity of arsenic given at first by Mr. Hunt is one twentieth of a grain of arsenious acid, and this in the form of a pill, three times daily. He finds that the stomach has much greater tolerance for arsenic when administered as a pill than in the form of Fowler's solution, and "the most sensitive, by taking the pill immediately after meals, have been enabled to continue it as long as it has been necessary, while others can take two pills or one tenth of a grain, three times a day, for a considerable period, without any unpleasant effect."

XVII. Mr. PERRY has communicated a remarkable and interesting case of *Excision of the entire Lower Jaw;* the operation being rendered necessary by necrosis following an unusual course.

XVIII. In a paper on *Concentric Hypertrophy* of the heart, Dr. Budd has taken great pains to ascertain whether the condition to which the term is applied is an actual disease, or whether the opinion entertained by M. Cruveilhier, of its depending on the mode of death, is the correct one. We have only space for the conclusions to which his examinations of several cases have led him.   I. In the recorded cases of concentric hypertrophy of one of the ventricles unconnected with valvular disease, there was no permanent diminution of the cavity during life; because, 1, similar appearances have been observed in the hearts of persons who died by the guillotine, and in subjects who died by cholera; 2, in these cases, the symptoms of cardiac disease were slight, not such as must have been caused by a ventricle so much contracted as it appeared to be after death; 3, in two cases, the cavity was restored by mechanical means to its normal size, and in none was there any obstacle behind it, by which its permanent diminution could be explained.   II. In six cases, complicated by extensive valvular disease, the diminution of the cavity cannot be explained by an obstacle behind it; and in some of these cases, the existence of an obstacle before it renders it highly probable that this diminution was merely a passing condition of the ventricle; and as the appearances of concentric hypertrophy were not more marked in these cases than in those of the former class, and as the symptoms of obstacle to the circulation, observed in these cases, were such as would result from the diseased valves alone, we cannot admit the existence of concentric hypertrophy in this class.   III. Concentric hypertrophy of a ventricle (mostly the right) in a high degree, with obstruction at its discharging orifice and an extraordinary passage for blood, occasionally exists as a congenital malformation.   IV. Hypertrophy of the heart, to whatever extent it exists, when it is exempt from dilatation of its cavities, and from disease of the valves, does not produce any of the symptoms of an obstacle to the circulation through the heart.

XIX. Mr. Samuel Hadwen has related a *Case of Popliteal Aneurism,* in which hemorrhage succeeded to ligature of the superficial femoral artery, for which the femoral artery was tied immediately below Poupart's ligament.   The hemorrhage from the first wound recurred, and as the ends of the bleeding vessel could not be discovered, the thigh was amputated.   For nineteen days the case proceeded favorably, at the end of which time, the wound in the groin began to bleed, the blood being arterial and flowing in increasing quantity.   The following day, as very profuse bleeding had greatly endangered life, a ligature was passed round the external iliac artery, in the manner recommended by Sir A. Cooper. On the twenty-ninth day after the operation, the ligature came away from the external iliac, and the convalescence of the patient was steady and permanent.

Experience confirms, (it is observed by Mr. Hadwen,) what the anatomical peculiarities of the femoral artery in the upper part of its course would indicate as highly probable, the danger attending ligature of the vessel in that situation; a danger, it appears, very far greater than that of passing a ligature around the external iliac artery.   For " of eight cases in which a ligature was applied to this (the superficial femoral) artery, six were attended with consecutive hemorrhage, two with death, and

two with a favorable separation of the ligature; giving to this operation a highly dangerous character." But Mr. Hadwen "cannot find a single case recorded of bleeding attending the separation of a ligature placed upon this (the external iliac) artery; so that it may be said, not merely as Mr. Hodgson observes, that the external iliac may be tied with as much safety as any artery to which a ligature has been applied, but that, of all the large vessels of the human body, it is the one that may be tied with the greatest security, as far as the effects of the operation are concerned, and with the best effect upon the diseases to which it is applicable." Mr. Hadwen's conclusion, and it appears to be quite justified by his fact, is, that except in a wound of the artery at the groin, ligature of the common femoral artery should never be performed.

XX. This is a *Case of Hydatid of the Liver successfully tapped,* by Dr. Cox, of Yarmouth.

XXI. We have in a previous Number given a notice of Dr. W. Thomson's first paper, *On Black Expectoration and the Deposition of Black Matter in the Lungs.* In the present volume is a second paper on the subject, which is devoted to the opinions entertained by medical authors on the disease in question. It is a very careful and elaborate compilation, well worthy of perusal, but not such as, with the limited space which we could afford to it, would supply matter of much interest to our readers.

XXII. Sir David Dickson next relates the history of *a Case of Enormous Ventral Aneurism,* which is only remarkable for its vast size. It originated in the descending aorta, and "was so immense that, with the exception of the cæcal region, it might be said to occupy the epigastric, both hypochondriac, the umbilical and left iliac regions, and the pelvis."

XXIII. Dr. G. Rees, in a paper, *on the Proportions of Animal and Earthy Matter in the different Bones of the Human Body,* has been led to the following conclusions:

"1. The long bones of the extremities contain more earthy matter than those of the trunk. 2. The bones of the upper extremity contain somewhat more earthy matter than the corresponding bones of the lower extremity, the difference being about one half per cent. 3. The humerus contains more earthy matter than the radius and ulna; and the femur more than the tibia and fibula. 4. The tibia and fibula contain, as nearly as possible, the same proportions of animal and earthy matter, and the radius and ulna may also be considered alike in constitution. 5. The vertebra, rib, and clavicle are nearly identical as regards the proportion of earthy matter, the ilium containing somewhat more of earths, the scapula and sternum somewhat less; the sternum containing more earthy matter than the scapula. 6. The bones of the head contain considerably more earthy matter than the bones of the trunk, but the humerus and other long bones are very nearly as rich in earths. 7. The metatarsal bones may probably be ranked with those of the trunk in proportional constitution." (p. 409.)

The above conclusions which are applicable to bones of the adult; likewise hold good in some respects with fœtal bones, for "the bones of the upper extremity (of the fœtus) contain somewhat more earthy matter than the corresponding bones of the lower extremity: the humerus con-

tains more earthy matter than the radius or ulna, and the femur more than the tibia or fibula: the ilium contains somewhat more, and the scapula somewhat less earthy matter than the clavicle or rib." (p. 412.)

XXIV. The concluding paper by Mr. Tyrrell, is *on a successful Plan of arresting the Destruction of the Transparent Cornea from Acute Purulent Inflammation of the Conjunctiva;* a plan which its author characterizes " as one of extreme value in the treatment of this hitherto most destructive disease." It is a beautiful instance of the application of anatomical knowledge and accurate pathological principles to the treatment of disease; and we are induced by it to express a wish, which we have long entertained, that Mr. Tyrrell would benefit the medical profession by publishing his own rich and cultivated experience in ophthalmic disease generally. Amidst the mass of remedies which fall under our notice, it is no little relief to meet with one, the operation of which is so clearly and satisfactorily explained, and the effects of which are so decisive and beneficial. The plan followed by Mr. Tyrrell in this paper is, first, to " describe the mode of organization of the cornea; secondly, to explain how it is so rapidly destroyed in acute purulent ophthalmia; thirdly, to detail the mode of applying the remedy which has been found so successful, and lastly, to give some cases illustrative of its effects." With regard to the anatomy of the cornea, it is necessary to remember its inseparable union with the sclerotica; the closely adherent conjunctival covering, the existence of which as a distinct prolongation of the conjunctiva is chiefly seen in disease, when also it is seen that the chief vascular supply of the cornea is from the vessels of the conjunctiva, and not from the sclerotica.

The acute purulent inflammation of the conjunctiva, whether of idiopathic or specific origin, presents similar characters, runs through the same stages and leads to the same consequences, if unchecked. Among its well-known symptoms, we here allude to the great vascularity, to the chemosis either " complete or incomplete, as surrounding the margin of the cornea partially or entirely. When it is complete, (says Mr. T.) the cornea is in momentary danger by destruction of its vitality, which takes place in the following manner: the elevation of the sclerotic part of the ocular conjunctiva by subjacent deposit, renders it tense, and creates so much stress and tension on that part which is firmly bound down over the junction of the cornea and sclerotica, that the circulation through its vessels becomes impeded and ultimately arrested, so that the principal vascular supply of the cornea is cut off, and it dies or mortifies in part or in toto. The cornea first assumes a nebulous appearance, but its brilliancy remains; this, I believe to result from the deficiency of the interlaminar fluid, in consequence of impeded circulation; it resembles closely the appearance which may be produced by pressing the cornea firmly with a narrow body, so as to press the lamina together to exclude the interlaminar fluid. This nebulous state is usually general, and of short duration, and is succeeded by a dull and dense opacity of a part or of the whole of the cornea, which, at the same time, loses its brilliancy. There is not at any time evidence of any inflammatory action either in the cornea or in its conjunctional covering, and the destruction of these parts is usually too rapid to be the result of such morbid action in the textures themselves. The

cornea then mortifies from a strangulation of its blood-vessels, and this strangulation is produced by the chemosis or elevation and tension of the conjunctiva which covers the sclerotic." (p. 420.)

Mr. Tyrrell's object in treating the disease was most effectually to relieve the tension of the chemosed conjunctiva, freely dividing it, without implicating its principal vessels; and he determined on the following mode of operation. He raised and secured the upper eyelid as far as possible, as in the operation for extraction, and then made free incisions into the sclerotic portion of the ocular conjunctiva, without injury to any other texture of the globe. He " considered it essential that the incisions should extend close to the margin of the cornea where the tension and pressure would be greatest, and that the direction of the wounds should correspond to the intervals between the insertions of the recti muscles, so that the principal vessels of the conjunctiva of the globe should not be injured."

The novelty in this communication is the mode of dividing the chemosed conjunctiva, and the anatomical reason for so doing. Mr. Tyrrell speaks of the disappointment and failure which attend on the ordinary method of dividing the chemosed conjunctiva, and if the principles here laid down are correct, the explanation of such failure is sufficiently easy. Several cases follow which should be attentively studied. They are the best evidence of the value of a mode of treatment which, it can only be lamented, has not been earlier known. From them we select the following, the first in which Mr. Tyrrell divided the chemosis, as above recommended. The case is that of a robust and strong young man with acute gonorrhœal ophthalmia in one eye. The palpebra were very much swollen, tense, and shining; the morbid secretion thick, copious, and of a deep yellow colour mixed with green; the chemosis was complete, and the cornea generally hazy or nebulous; but its surface was brilliant except at one point, where mortification had begun. The disease had not existed twenty-four hours. The chemosis was freely divided from the margin of the cornea towards the orbit once or twice in each space between the attachments of the recti muscles, the point of the knife being inserted just over the junction of the cornea and sclerotic, and passed outwards, the back of the knife being kept close to the sclerotic, as its acute edge divided the affected membrane: each incision had a direction radiating from the centre of the cornea. The chemosis was firm. Hot water was applied directly after the incisions, to encourage the bleeding. Soon after, the patient was bled from the arm, to the extent of about fourteen ounces, sufficient to relieve the fulness and firmness of his pulse: he took fifteen grains of calomel and colocynth, and was further directed to take calomel gr. ij., opii gr. ss., every six hours; to apply leeches freely to the palpebræ if pain recurred, and to bathe the eye frequently with a warm decoction of poppy. Diet of gruel, tea, toast and water, or soda water. On the next morning, the disease was found to be checked, the largest portion of the cornea had recovered its transparency, but an oval spot equal to about one third of the whole was dead: the chemosis and tumefaction of the palpebræ were much reduced; the conjunctiva was but lightly coloured, the morbid secretion was thinner and less copious, and he was free from pain; his medicine had acted freely, and he had applied a dozen of leeches to the eyelids on the preceding evening. In forty-

eight hours after the division of the chemosed membrane, the acute stage
was annihilated and he left off the calomel and opium.   Recovery was
rapid and perfect; there remained only a small, dense, opaque cicatrix in
the cornea, which did not interfere with vision.   Speaking of this case,
Mr. Tyrrell says that, " I had not previously seen a single case in which
the eye had been saved when the disease had made the same extent of
progress."   We wish that we had space for other of the cases, some of
which show the admirable effects of the above treatment under circum-
stances far more unpromising than those of the above case.   Other advan-
tages attending Mr. Tyrrell's method are thus mentioned, " It renders
unnecessary active depletion, or the adoption of any severe general or
local measures likely to injure the general health, or to produce severe
suffering.   It cannot increase the risk of a case.   It has been tried suffi-
ciently to warrant my stating that it will be rarely found to fail; and I
offer it with confidence to those, who, I feel satisfied, will give it a fair
trial, and decide candidly and honestly on its merits."   This paper is
most creditable to Mr. Tyrrell, and cannot fail to add to his high
reputation.

The notice which we have thus terminated of the last volume of the
Medico-Chirurgical Society's Transactions, is almost purely analytical:
by giving it this character, we have been enabled to present to our
readers, the chief valuable practical matter which the work contains.

Art. VIII.

Urinary Diseases and their Treatment.   By Robert Willis, m.d.,
 Physician to the Royal Infirmary for Children, &c.—*London*, 1838.
 8vo. pp. 408.

There have been, of late years, since the examination of the urine has
been conducted on principles tolerably well understood, many valuable
contributions on the subject of urinary diseases.   In our own country,
Marcet, Bostock, Brodie, Prout, &c. may be mentioned, as having
acquired much celebrity, in this department of medicine, from the light
thrown by their researches on matters previously very little known, or
involved in much obscurity.   On the continent, there have been many
contributors to the same subject.   The communications to the public, of
the discoveries of these various experimenters, lie in individual volumes,
in Transactions of Societies, in Journals, &c.; and it was a matter very
much to be desired, that some one competent to the task should trouble
himself with the making of a compilation, which should contain a com-
prehensive arrangement of all that was known.

We do not know that a more competent author than Dr. Willis could
have been found to undertake the task: possessing, as it is evident from
his work that he does possess, an accurate acquaintance with the subject
in all its details, considerable personal experience in the diseases of which
he treats, capacity for lucid arrangement, and a style of communication
commendable in every respect.   His object has been "to give a compre-
hensive and connected view of the functional derangements of the organ

which secrete and excrete the urine, and of the medical and dietetic treatment adapted to their different forms;" and " a particular consideration of stone in the kidney and bladder, and of its remedy by medical means." Connected with the descriptions of various conditions of urine are modes of analysis, sufficiently delicate for common purposes, some of which will be very acceptable to many of our readers. From the character of the work, our notice of it must be expected to be very incomplete; although, if our estimate of its value could only be judged of by the length of our review, we should scarcely know where to stop.

Its introductory chapter treats of the physiology of the kidneys, and of the natural constitution of the urine. Especial reference is made to these organs as excretors of nitrogen; the importance of which office is not only evinced by morbid phenomena, but by the very general existence of the kidneys, or of organs allied to them in function, throughout the animal kingdom. It is remarked that the quantity of nitrogen in the food is the chief element in determining the amount of solid excrementitious urinary matters. It is well known that the kidneys are both *secreting* and *separating* organs, urea having been detected in the blood of animals whose kidneys had been extirpated; but the exact limits of these two functions cannot be at all determined. Dr. Willis thinks that the average specific gravity of healthy urine, among grown individuals, cannot be estimated more closely than 1·015. Whilst on this subject, we would refer to the table of Dr. Bostock, published in the last volume of the Medico-Chirurgical Transactions, noticed in a former article; and we would also insist on the necessity of employing instruments, in ascertaining the specific gravity of the urine, the scales of which accurately correspond: we have seen urinometers prepared by different makers, enjoying a good reputation, the scales of which were entirely discordant. Elliott, 112, High Holborn, is the maker of the urinometer which Dr. Willis employs.

The following is Dr. Willis's arrangement of his subject: The first part of the book is devoted to functional derangement of the kidneys and their immediate consequences; the second to functional derangement of the organs which excrete the urine. The first part contains eight chapters; the titles of which, to prevent recapitulation, and to put our readers in possession of the general scope of the volume, we here extract:

"CHAPTER 1. Morbid states in which the secreting faculty of the kidneys is exalted, and the menstruum and readily-soluble principles of healthy urine occur in altered absolute or relative quantity. Ch. 2. Morbid states in which the secreting faculty of the kidneys is lessened or abolished. Ch. 3. Morbid states in which the urine contains, in excess and as precipitates, certain ingredients that occur normally in smaller quantity and in solution. Ch. 4. Morbid states in which the urine contains, in solution or as precipitates, certain principles which do not occur in the healthy secretion, but appear to be derived immediately from one or other of these. Ch. 5. Morbid states in which certain matters being constituents of the blood are contained in the urine. Ch. 6. Morbid states in which the constituents of secretions and altered elements of the blood are discharged with the urine. Ch. 7. Morbid states in which principles foreign to the urine and the blood, and derived from none of the natural constituents of these fluids, are eliminated by the kidney. Ch. 8. Consequences of one or other of the morbid states described, particularly of those comprised in Ch. 3 and 4.—Urolithiasis, the formation and growth of urinary calculi."

Regarding the above as an entirely artificial arrangement, we can see no objection to it; but the nomenclature applied to the subdivisions or sections, we think is the most defective part of Dr. Willis's book. There are abundant objections to many terms at present applied to urinary diseases, and a correct system of nomenclature is a great desideratum. But, to substitute a new inappropriate designation for another, is a very great defect. We will illustrate what we mean. The first part of the work before us treats of " functional derangements of the kidneys and *their immediate consequences,*" and beneath the first chapter we find the following Sections. " Sect. 1. Of the discharge of urine, which is characterized by a deficiency of solid matters, generally, *Hydruria.* Sect. 2. Of the discharge of urine which is characterized by a deficiency of urea, *Anazoturia.* Sect. 3. Of the discharge of urine which is characterized by a superabundance of urea, *Azoturia.*" Now, had these terms " Hydruria, Anazoturia, Azoturia," been applied merely to certain conditions of urine, they might have been free from objection, provided that they were descriptive of the condition, and included the whole morbid change. But the heading of this first part shows us that these terms are intended to apply to functional derangements of the kidneys and *their immediate consequences ;* and under each section is described a disease of which the condition of the urine is but one of the symptoms: so that the term debility, emaciation, or any other attendant condition might with as much propriety be employed as a designation, as those which have been adopted, from one condition of the urine alone. If we look at the function of the kidney to be not only secreting, but separating, that is, acting merely as a sieve upon principles existing in the blood, the impropriety of the above nomenclature is more manifest; for, in what part of the system does the fault commence? It may be in the digestive apparatus: it may be originally in the blood: it may be in the absorbent system: it may be in one or more, or in none of these. If doubts of this kind are admitted to exist, there can be no question of the impropriety of introducing any new names of the character of those which we have noticed. At the same time, however, that we make these observations, we must say, that in none of his chapters does Dr. Willis appear to have taken other than a comprehensive view of his subject.

Under the term *Hydruria,* by which is meant a discharge of urine characterized by deficiency of solid matters, generally, a condition is referred to as existing in advanced years which has not met with the attention which it deserves. There are frequent calls to make water, connected with *an augmented flow of urine of low specific gravity ;* the case generally being regarded as one of irritable bladder, the quality and quantity of the urine being overlooked. The indications for treatment which are mentioned are sufficiently obvious, consisting mainly in attention to the general health. In the aged, laudanum is regarded as likely to produce very beneficial effects.

The next section treats of the discharge of urine which is characterized by a deficiency of urea, *Anazoturia.* Here the urea is both relatively and positively deficient. This, as well as the former disease, has been described as *diabetes insipidus,* and Dr. Willis believes that many of those cases of diabetes which have been described as cured have belonged to this head. The only cases of it which he has seen had been in

children. The urine is very abundant, limpid, of a pale straw colour, or colourless, and of a very faint smell. It is weakly acid or neutral when first voided, rarely precipitates within twenty-four hours, but soon changes; it becomes faintly ammoniacal and covered with a fine creamy pellicle on its surface, which shows the minute pearly-white crystals of the ammonia-magnesian phosphate. The cases seen by Dr. Willis, with other instances collected from books, and classed with much probability with them " have many features in common. They were all characterized by thirst, gnawing sensations at the pit of the stomach, white furred tongue, constipated bowels, and a parched state of the skin. There was also more or less of emaciation, considerable loss of strength, and gene-rally great depression of spirits in all. The hyperuresis in this class of cases, is, therefore, a much more important symptom than in those where it occurs without obvious implication of the functions of nutrition." The treatment in these cases must be directed to the restoration of the functions of the stomach, bowels, and skin; to the suppression of the habitual excitement under which the kidney labours, and to the confirma-tion of the health generally.

Azoturia is a term applied to a condition where the urine is characte-rized by a superabundance of urea; another form, according to our author, of *diabetes insipidus*. It will be found, on analysis, that the quantity of urea, in proportion to the solid ingredients, is in these cases very large. The calls to void the water are very urgent: the general symptoms are those connected with loss of strength, feelings of languor, a greater or less degree of emaciation, &c. Cases of diabetes reported to have been cured are considered by Dr. Willis as belonging likewise to this head. The functions of the kidney are regarded as being increased, the organ being in a state of erythism, requiring general and local bleeding, succeeded by blisters and remedies acting beneficially on the general health. The following directions for analysis of the foregoing conditions of the urine will be very acceptable to many of our readers.

" The general appearance, degree of transparency, disposition to deposit, odour, &c. are to be noted. The specific gravity is then to be ascertained. A given quan-tity of urine, say 1000 grains, is then to be slowly evaporated, at a temperature not exceeding 160 or 200 degrees of Fahrenheit, till it ceases to lose weight. The quantity of extract being ascertained by weight, the proportion of the solid matters to the water will become equally known. The extract is next to be digested with strong boiling alcohol (sp. gr. ·833), which will take up the urea and salts (the lactates) which are soluble in alcohol. What is dissolved is to be poured off; what remains is to be washed once or twice with a little fresh-boiling alcohol, which is to be added to the first. The alcoholic solution is then to be reduced by slow evaporation to the consist-ence of extract, or till it ceases to lose weight, and its quantity ascertained. The saline mass, which was insoluble in alcohol, is to be treated with distilled water at 60° F. two or three times; and the different solutions being added together, and eva-porated to dryness, the quantity of saline ingredients—the soluble chlorides, and alka-line phosphates and sulphates,—will be discovered. The insoluble matters, consisting principally of the earthy phosphates which remain on the filter, being dried, are to be weighed. They are afterwards to be digested with caustic potash; and, being dried and weighed again, the quantity of mucus or other animal matter will be estimated by the loss of weight, if any, which is sustained. This is as much as is required for medical purposes." (p. 25.)

The disease commonly called ischuria renalis receives from Dr. Willis the name *anuria*. The pathology of the disease is so obscure that it is

not surprising that the author has nothing new to communicate concerning it. There is, however, a symptomatic form of the disease, called by Schönlein *urodialysis neonatorum*, which Dr. Willis has occasionally met with. The infants thus affected void very small quantities at a time of extremely high-coloured urine, which stains the linen of a deep reddish colour. It seems to be passed with great pain, and scalds the surfaces over which it runs, exciting inflammation in the mucous lining of the bladder and urethra; as appears by the increased quantity of mucus whice soon passes away with the urine. A more or less febrile condition accompanies this state. The skin is generally irritable, and occupied by eruptions; and, wherever two surfaces come in contact, they almost certainly inflame, and pour out a thin, sharp, fetid fluid. The eruption of the skin occasionally appears in the form of small psydracious pustules, which break, and give rise to superficial and often troublesome sores; especially in the groins, axillæ, folds of the neck, &c.: and a very analogous condition, described by Schönlein as *urodialysis senum*, occurs among persons in the decline of life.

With regard to the histories of vicarious discharges, which are said to have been observed in some instances of idiopathic ischuria renalis, Dr. Willis exercises a very desirable scepticism. All cases the evidence of which rests only on the authority of the patient, we should agree with the author in rejecting; but there are some recorded instances, such, for example, as that mentioned by Dr. Hastings, and referred to in the volume before us, which we cannot believe would ever have been published if there remained in the mind of the narrator a shadow of doubt of their correctness. A fair case for the possibility of such an occurrence may be made out. The characteristic property of urine mainly depends upon the urea, and it is not pretended that the fluid said to have been thus vicariously discharged possessed all the properties of urine. Now, there is no doubt of the existence of urea in the blood in these cases of anuria. We know that bile circulating in the system escapes freely by the kidneys; and we have seen expectoration, in a case of jaundice complicated with pneumonia, possessing all the appearances of bile. With these somewhat analogous facts, and others of a similar nature which might easily be collected, we should be indisposed entirely to deny the possibility of various recorded cases of vicarious discharge of urinous fluid from very unusual channels.

The sedimentary urine, in which the deposit consists of lithic acid and the lithates, is termed by our author *Lithuria*. The condition of the system in which these deposits occur is now tolerably well understood, although there are some prejudices existing concerning it, to which Dr. Willis has very appropriately alluded. We refer to his remarks upon dyspepsia as a cause of the superabundant deposits of lithic acid. Our own observations entirely accord with those of Dr. Willis, and long ago convinced us of the impropriety of so frequently referring this affection to dyspepsia.

"Undoubtedly the digestive organs are simultaneously affected along with every form of general constitutional disturbance, as also with the particular derangements of each and every one of the separate systems of organs which make up the body; but, because they suffer, and because their implication is forced in a peculiar manner on

our notice, and because we mostly apply our remedies through the channels they afford us, they are not therefore the causes of these disorders." (p. 71.)

The above quotation is capable of a far more extended application than to the diseases which we are at present considering; and we believe that there is nothing more likely to impede the progress of our acquaintance with these diseases, or to cripple our means of a radical system of cure, than the habit of looking at them all through the digestive system. We have been disposed to regard the various sediments containing lithic acid as more simple than further analysis has shown them to be. Dr. Willis has given the results of the experiments of Vigla and Quevenne, which we subjoin:

" *Red crystalline sediment*, composed of lithic acid and the colouring matter of the urine. The crystals are rhomboidal prisms, which, in the field of the microscope, appear under the form of pretty regular lozenges, generally of a beautiful topaz-yellow colour singly.

" *Lateritious, red, or reddish brown sediment*, composed of lithate of ammonia; purpurate of ammonia and soda; colouring matter of the urine, and occasionally an admixture of the earthy phosphates, (Prout;) lithic acid, combined with the colouring matter of the urine, (Vigla.)

" *Yellowish sediment*, composed of lithate of ammonia, essentially; a little lithate of soda, colouring matter of the urine, more or less of the earthy phosphates, (Prout;) lithic acid combined with less of the colouring matter of the urine than in the preceding form of deposit, (Vigla.)

" *Pink sediment*, composed of lithate of ammonia; purpurate of ammonia, (Prout;) almost wholly of lithic acid; some lithate of soda; an animal matter and a little phosphate of lime, (Vigla and Quevenne.)" (p. 58-9.)

. Some objections are offered to the opinion of Dr. Prout and others, that the immediate cause of the precipitation of lithic acid is the presence of a free acid in the urine. It is said that lithic acid, separated from its alkaline base by a free acid, is thrown down in an amorphous, and not in a distinctly crystalline form; that there are great doubts as to the acid by which it is supposed that this precipitation is effected. The muriatic, supposed by Dr. Prout to be the efficient acid in this precipitation, is only known to exist in the urine in combination with a base; the phosphoric retains the lime in solution, and the lactic is the least efficient of all the acids in causing precipitation of lithic acid from its state of solution in the urine: but Dr. Willis does not attempt a chemical explanation of the phenomena in question. There is nothing particularly novel under the head of treatment.

To many of our readers the mode of analyzing lithic urine and its deposits will be very acceptable. A known quantity (1000 grains) of the urine, after it has stood several hours, is to be poured on bibulous paper, and the fluid separated from the solid parts. Add to another portion a few drops of muriatic acid, to ascertain if it contain any additional lithic acid. The precipitation of the lithic acid may always be immediately secured by drying well and warming gently the glass vessel into which the urine about to be examined is poured, or by rubbing the inner surface of the vessel containing the urine, after a few drops of acid have been added to it, with a rod of wood. The colour of the deposits is best seen whilst they are still wet upon the filter. We have already shown how to ascertain the proportion of solid and fluid ingredients. To exa-

mine the nature of the deposits, boil a known quantity of any of them with distilled water, by which any alkaline lithates will be dissolved. Evaporate the solution to dryness, and add to the extract a few drops of nitric acid: this dissolves the lithates and lithic acid, with effervescence. The nitric-acid solution being dried with a gentle heat, the pink colour characteristic of purpuric acid will be evolved; and this tint will immediately pass into a bright purple on the addition of a little caustic ammonia. By this means we detect lithic acid. Another portion of the extract being mixed with some caustic lime, if it contains ammonia, this will be discovered by the smell, or by approaching a rod dipped in muriatic acid to the mixture. Another portion of the extract must be burned over the flame of a lamp, in a platinum spoon, and the residue tested for alkaline reaction. The nature of the alkali, whether potass, soda, or lime, is discovered by urging the residue for a moment in the flame of a blowpipe. If it be soda, the outer flame will be coloured yellow. Potass and lime are distinguished by the solubility of the former in distilled water; or, should the lime exist in a caustic state, when it becomes an oxide and then soluble, by a current of carbonic acid gas or a few drops of a solution of oxalic acid. The presence of the earthy salts,—the ammonia-phosphate of magnesia, and the phosphate of lime,—is known by the insolubility of the deposit in boiling distilled water, and by its ready solubility in dilute acid, from which the earthy bases are precipitated on the addition of an alkali. The relative proportion of the differently soluble lithates and the insoluble phosphates may be ascertained by digesting a known weight of the mixed precipitate in a sufficient quantity of attenuated caustic potass or soda, which takes up the lithates, and leaves the earthy phosphates behind.

In the author's remarks on phosphatic urine we find nothing to detain us, except a remark on a condition of the urine which has once or twice led Dr. Willis himself into error, and which, we believe, has been frequently mistaken by others.

"The milky look of the phosphatic urine at the time it is voided in some cases, and the fact of its letting fall a flocculent precipitate when exposed to the boiling temperature, are circumstances which have often led to the supposition that it contained albumen. The mistake is at once detected by adding a drop of the muriatic or nitric acids, by which the precipitate is immediately dissolved, and the fluid rendered completely transparent." (p. 95.)

We must pass over chapters iv. v. and vi., as, although they are full of curious and interesting subjects, industriously collected and very carefully and ingeniously commented on, they are of less practical interest than some other parts of the work. We must make exception, however, to our author's remarks on albuminous urine in certain dropsies. He does not appear to have alluded especially to this condition of the urine as associated with a uniformly low specific gravity. That the urine may be albuminous in dropsy is saying no more than may be said of the urine in health: but our own observation, and we have had some considerable opportunities of noticing the circumstance, would lead us to coincide with those who maintain that where, with dropsy, there is associated an albuminous condition of the urine, the fluid never indicating a density of more than 1.015, but frequently one much below this, there exists a condition of the kidney which will sooner or later terminate in disorgani-

zation. It requires a series of years,—more, perhaps, than have yet elapsed since the subject has been so much discussed,—to follow up some slight cases of anasarca, with the above condition of the urine, to their termination; but because, either accidentally or as a result of treatment, the dropsical symptoms have disappeared, we do not therefore consider that the diseased condition has entirely ceased. Let the urine of such an individual be frequently examined after he has recovered a certain degree of health, and we doubt if it will be ever found of the same specific gravity as that of a healthy individual. The kidneys appear to have lost a part of their function; they pass not unfrequently a fair quantity of urine, but far below its proper quality; and slight sources of irritation will restore the albuminous condition of the fluid and the effusion into the cellular tissue. We think that Dr. Willis is disposed to regard as of too little importance, in a diagnostic point of view, the above condition of the urine.

We regret that we have no space for more than a reference to, and a recommendation of, the sections on Oleo-albuminous Urine and on Hæmaturia.

Melituria is the term applied by Dr. Willis to *diabetes mellitus.* In reference to the frequency of this disease, it is mentioned by Dr. B. G. Babington, that "his father, the late Dr. Babington, when in very full practice, had found him opportunities of seeing as many as *twenty-three cases of the disease at one time,* in every one of which the sugary state of the urine was ascertained." There are some remarks on the pathology of the disease, which are interesting as facts, but which do not appear to us to throw much light upon its obscurities. To these we shall shortly allude. We do not mention as among the facts above alluded to that Dr. Willis is disposed to believe, with Frank, in the existence of a diabetic virus; an animal poison, which, either introduced into the system or engendered within it, converts food of all kinds into sugar, the sugar circulating in the blood, and producing all the evil effects characteristic of the disease. The theory of animal poisons, although deficient in proof with respect to some diseases, is supported by so much analogy that it often appears to us one of the most satisfactory cities of refuge to which our ignorance may resort. By Ambrosioni, first of all, and afterwards by Mr. Charles Maitland, sugar was detected in the blood of a patient labouring under melituria. Mr. M'Gregor, of Glasgow, has detected sugar, in a certain quantity, in the healthy stomach, avoiding all sources of fallacy from food taken into that organ; he has likewise found it in the stomach, mixed with the saliva and with the fæces of diabetic patients; the perspiration has been observed to possess a sweet taste, and the cuticular scales to be similarly characterized in cases of this disease. Taking these facts, together with such reasonings as our knowledge of animal poisons allows us to employ, it is stated that we are in a condition to do more than speculate on the nature of this interesting disease; that a key is afforded to the right understanding of the whole phenomena of melituria; and that derangement of the digestive functions is here unquestionably the head and front of the offence; that this derangement is of a peculiar kind, consisting in a disposition of the stomach to form sugar from food. The healthy stomach forms sugar to a limited extent: it is formed to excess by the stomach in melituria, and the sugar is not, as in the

healthy state, decomposed, but enters the circulation; the symptoms all being explicable on the supposition of a foreign substance circulating in the blood. The derangement of the kidney, it is further supposed, is purely secondary, and is a means of purifying the system from the sugar. The precise nature of the gastric affection, it is admitted, is a question of difficult solution. Founded on this theory of the disease is the following indication of treatment: " *Could we,*" says Dr. Willis, " *discover any means of preventing the stomach from forming sugar, we should, I believe, succeed in curing the disease.*"

We have given the above sketch of the pathology of melituria but without being able to regard it, or the indication of treatment founded upon it, as correct. The facts are very interesting, but by no means necessarily lead to the conclusions drawn from them. It is certain that the earliest symptoms of melituria are not known, that consequently from symptoms there is no key to the organ or system of organs which are first of all functionally affected. Dr. Willis supposes the existence of a virus. It has been shown that sugar exists in the blood, in the stomach, in the saliva, in the fæces, in the perspiration. The question then arises, as to where the disease (the first effects of the virus, if such is supposed to exist,) commences. The sugary condition of all the secretions is doubtless dependent on the state of the blood, and to us there appears to be as much reason to regard the blood as primarily affected as the stomach. With the present amount of our knowledge, we confess the inutility of following any further these speculations; but we are induced to state them, because we do not regard it as at all certain that Dr. Willis has (as above mentioned) discovered, any more than his predecessors, the right indication for treatment in melituria. The remarks made by the author upon dyspepsia, as a condition on which a lithic state of the urine is by no means dependent, we think are fully applicable to diabetes mellitus, and it only surprises us that he has not also been struck with their applicability. From Dr. Willis's remarks on the various remedies employed in diabetes, we quote the following, on magnesia, the effect of which he considers as somewhat *specific* in the disease.

" Mr. Benjamin Phillips lately prescribed magnesia, upon two occasions, to the same individual labouring under melituria in an early stage, and in each instance with success: the sugar disappeared from the urine, the thirst and all the other symptoms of the disease were immediately relieved and speedily vanished. I had lately under my care at the Infirmary for Children, a child about five years of age, with the symptoms of melituria well marked; the urine was copious, of high sp. gr. (1.033,) passed spontaneously into fermentation, yielding abundant bubbles of carbonic acid gas for several days, and acquired something of a vinous ordour. The constitutional symptoms were also those of the disease; there was wasting, thirst, shrivelled skin, &c. The magnesia in half-drachm doses in mint-water three times a day, three grains of Dover's powder at night, castor oil in quantity sufficient to keep the bowels open, and a regulated diet consisting principally of eggs and meat, had the effect of relieving all the symptoms in the course of four days: the thirst was appeased, and the urine was reported as nearly natural in quantity." (p. 231.)   Unfortunately, Dr. Willis now lost sight of the case.

Mr. M'Gregor's mode of detecting urea in diabetic urine is this: " He destroys the sugar in a given quantity of urine by fermentation with yeast, evaporates to dryness in a steam bath, treats the residue with hot strong alcohol, filters, evaporates the solution to dryness, and obtains the urea

in a crystalline form, not pure indeed, but sufficiently so for all practical purposes."

Fermentation with yeast is the most delicate and available test for sugar; half a grain of sugar in two ounces of urine being easily detected by it. The test may be thus employed: "The yeast should be introduced into the bottom of a phial, and a given weight of urine having been gently poured in, so as not to disturb it, the mixture is to be placed in a temperature from 70° to 80° F. At the end of forty-eight hours, the fermentation will have ceased; and the degree of attenuation undergone by the fluid will afford an index to the quantity of alcohol formed, otherwise, to the quantity of sugar destroyed."

There is one advantage possessed by a physician over a surgeon, in treating the subject of renal and vesical calculi. Cutting is no part of his province, and he consequently endeavours, as far as possible, to prove its inexpediency. The opposite error is one against which he must guard himself. He requires, perhaps, to be cautioned, lest with his deluges of solvents, introduced into the system and into the bladder, he fails of the proposed object, and leaves his patient in a more unfavorable condition than he found him. The last chapter of the first part of Dr. Willis's book is devoted to renal and vesical calculi. As it is too extensive for us to notice entirely, we shall select from it the evidence which exists in favour of other than surgical methods of curing stone in the bladder. We think that Dr. Willis has made out a very fair case, and we feel somewhat surprised, with him, that, with the evidence which exists on the subject, more attempts have not been made to effect the solution of calculus. He remarks that, " if so excellent a chemist as Mr. Brande, in England, has almost ridiculed the notion of our ever effecting the solution of a stone in the bladder, Fourcroy and Vauquelin, in France, and Berzelius, in Sweden, have held this feasible, and have encouraged us to persevere; if M. Civiale has declared such a thing impossible, his countrymen MM. Robiquet and Ch. Petit, in Paris, and Sir B. Brodie have, in different ways, performed the feat." We select from a numerous catalogue of them, the following facts. Cloquet found that a calculus of lithic acid subjected to the action of *pure water* for five hours a day, during a month actually *lost a line and a half in its diameter*. So much for simple diluents. The alkaline bicarbonates contained in the waters of Vichy have been found very efficient in their action upon various kinds of calculi. The water contains a large proportion of free carbonic acid, and very nearly a drachm and a half of bicarbonate of soda in each thousand drachms of the menstruum. At a temperature of 97° F. the Vichy water speedily dissolved lithic-acid gravel. The half of a lithic acid calculus, weighing one ounce one drachm and thirty-six grains and a half, was placed in a little bag of wire muslin and subjected to the action of the Vichy water during 151 hours. Dried and weighed after this, the calculus was found reduced to two drachms, fifty-two grains. In a similar bag, calculi of phosphates were disintegrated, and their particles washed through the meshes of the muslin. Very little change was produced upon a calculus of oxalate of lime. A piece of an ammoniaco-magnesian phosphatic calculus, weighing 31.50 gr., immersed for eighteen days in the water, was found reduced to 17.25 gr., having lost 45.23 per cent. From the ascertained action of the Vichy water upon

various calculi, it is concluded, that it will " attack something like nine-teen-twentieths of all the known varieties of urinary concretion."   Such are among the facts observed out of the body.   Cases recorded by Dr. Petit, of Vichy, lead to the conclusion that similar solution or disin-tegration has followed their use as copious diluents, internally.   But the action of these and similar waters must not be regarded as simply diluent : they act much more rapidly on the lithic acid, lithate of ammonia, and triple phosphate of ammonia and magnesia, than pure water.   Besides increasing the quantity of the urine, they alter its chemical constitution ; from acid, it becomes neutral and then alkaline; from high coloured, it becomes pale; from having deposited copiously, it becomes limpid and transparent.   The remarks which have been made upon the action of waters containing in solution alkalies and alkaline carbonates, apply very much to artificial solutions of the same.   The repeated influence of such medicines is well enough known ; and few are not acquainted with cele-brated instances of their effects, as well as with the objections which have been made to their supposed solvent powers, and the explanations which have been given of the benefit which has often attended their use.   It is important to bear in mind, that it is not in a caustic state that the influ-ence of the alkalies is most evident; that weak solutions of the alkaline bicarbonates act as certainly and almost as quickly upon urinary con-cretions of lithic acid as solutions of the caustic alkalies of equal strength. Calculi of the triple phosphate of lime are not *dissolved* by solutions of the alkaline bicarbonates; but they are *disintegrated* and rapidly reduced to powder by their agency, and others which cannot be so acted upon are of unfrequent occurrence.

The subject of the *solution of stone by means of injections into the bladder* is one of very great interest; and the statements and facts of Dr. Willis on this head are such as deserve the most attentive considera-tion.   We have seen the effect of the Vichy waters upon calculi external to the body, and it is not difficult to subject calculi within the bladder to the continued action of solvents.   We do not see that Dr. Willis has alluded to a very admirable method of passing a current of fluid through the bladder.   It is practised by M. Civiale in Paris in some diseases of the bladder, and probably by others.   A bucket is suspended from the ceiling above the bed of the patient.   A flexible tube passes from it and communicates with one partition of a double catheter.   The fluid escaping from this bucket traverses one division of the catheter, washes the bladder, and escapes afterwards through the other partition.   We shall be excused, if, although not of recent date, we shortly allude to some of the facts mentioned by Dr. Willis, in illustration of the solvent effects of injections of the bladder.   Dr. Rutherford, in 1753, relates the case of a patient, with a large calculus in the bladder.   Under the united influence of alkaline medicines by the mouth, and injections of lime-water by the urethra, the stone was reduced to a mere nucleus, and eventually disappeared, being undiscoverable by a sound.   Berzelius on this subject says, " The attempts that have hitherto been made to dis-solve calculus in the bladder have not answered expectations : but I am intimately persuaded that they have not been repeated often enough to allow of those accidental circumstances which are never to be foreseen, but which always occur (and oppose success in new courses) from

becoming perfectly known, and either guarded against or vanquished."
MM. Magendie and Amussat brought away, by means of a thin injection
slightly acidulated with sulphuric acid, a large quantity of calculous
detritus.   Sir B. Brodie's case is known to most of our readers, in which,
by the use of a diluted nitric acid injection, the solution of phosphatic
calculi was effected, until they were so reduced in size as to escape
from the urethra during an effort to make water. "I am thus," says
Dr. Willis, " enabled to adduce three instances, connected unquestion-
ably with as many different diatheses, in which, under the influence of
injections into the bladder, combined in the one case with the exhibition
of alkaline medicines by the mouth, (which was probably a part of the
treatment necessary to success,) uncomplicated and without such
assistance in the other two, in all of which complete success attended the
persevering efforts that were made to afford relief."   Certainly, the cases
adduced by Dr. Willis are such as to encourage attempts to dissolve cal-
culi in the bladder.   We are disposed to think that one of the reasons
why this method has not been attempted more frequently, is, that it
requires great patience on the part both of the surgeon and the sufferer;
and if we could supply this quality of patience, combined with most assi-
duous attention, as easily as we can recommend it, we think that other
diseases besides calculus, which generally lead to corporeal mutilation,
might be regarded as of tolerably certain cure.

Our notice of Dr. Willis's work must here terminate.   It is one which
we have redd, and trust again to read, with profit.   The history of dis-
covery is succinctly given; cases, curious and important, illustrative of
the various subjects, have been selected from many new sources, as well
as detailed from the author's own experience; chemical analyses, not too
elaborate, have been afforded which will be most convenient to those who
wish to investigate the qualities of the urine in disease; the importance
of attending to this secretion in order to a proper understanding of disease
is strongly insisted upon: in short, a book has been composed, which
was much required, and which we can conscientiously and confidently
recommend as likely to be useful to all classes of practitioners.

Art. IX.

*Principles of General and Comparative Physiology, intended as an
    Introduction to the Study of Human Physiology, and as a Guide to
    the Philosophical Pursuit of Natural History.* By William B.
    Carpenter, Member of the Royal College of Surgeons, London;
    Lecturer on Forensic Medicine in the Bristol Medical School, &c. &c.
    With 240 Figures in Copper and Wood.—*London*, 1839.   8vo.
    pp. 480.

The work before us has equalled our most sanguine expectations.
This would be recognized as high praise, were we to relate all that our
knowledge of the mental qualities of the author, and of the attainments
which have fitted him for his undertaking, had led us to look for.   But
this we shall, for various reasons,—some of which our attentive readers
will readily understand,—omit on the present occasion; satisfied that,

whoever shall carefully peruse Mr. Carpenter's book, will not fail to dis-
cover as much as we had ventured to anticipate. The excellencies of
many standard works on physiology are shared in no slight degree by
this production; for, if we do not mistake, it combines much of the
close reasoning of Alison, and of the comprehensive philosophical spirit
of Fletcher, with the richness in details and the accuracy of statement
which characterize the respective writings of Tiedemann and Müller. But
we forbear saying all that we feel on this subject, and hasten to give our
readers some idea of the plan of the work; the nature of which, however,
renders it impossible for us to offer, within the limits by which we are con-
fined, a full analytical account of it.

The work is divided into two books; the first comprising General
Physiology, the second Special and Comparative Physiology: but these
are preceded by an introduction of considerable length, and of corre-
sponding importance, presenting a summary of the characters of orga-
nized structure, and a general view of the vegetable and animal
kingdoms. The most characteristic feature of the whole work is the
attention paid to vegetable physiology; and we are acquainted with no
other treatise which exhibits the analogical bearings of modern discoveries
in this most interesting science on the physiology of animals, with any-
thing like the same extent and precision, or, at all events, in so syste-
matic a form.

The peculiarities in the mechanical arrangement of organized bodies,
as contrasted with inorganic, are a definite form, a determinate size, an
individuality, a consistence tending to softness, and a peculiar chemical
composition: upon these, although familiar points, the author offers
some very interesting remarks, noticing particularly the indistinctness of
these characters in the lower degrees of organization. Thus, with regard
to the first, its diagnostic value is lessened in the inferior cellular plants
and in the lowest animals, as sponges and polypifera, which are some-
what deficient in definitiveness of form; " and there is reason to believe
that, among these, the same germ may assume a variety of distinct forms
according to the circumstances under which it is developed, just as the
same mineral substance may present itself under a diversity of crystalline
shapes." (p. 12.) *Size*, again, is much less limited in the simpler orga-
nisms: witness the enormous length to which sea-weed may attain, and
the almost immeasurable extent of a coralline growth. The third charac-
ter, or *individuality*, lessens materially as we descend the scale: thus,
many plants and animals, instead of consisting of parts all subservient
to the whole, are assemblages of independent members, which are re-
peated, as it were, throughout the fabric. The gradation of this charac-
ter is thus happily expressed: "The individuality of a mineral substance
resides in each molecule; that of a plant, or inferior animal, in each
member; and that of one of the higher animals in the sum of all the
organs." *Softness* is a striking distinctive character of the organic
kingdom, as the opposite quality is of the mineral; but in the lowest
animals we find a great predominance of earthy materials,—in the coral-
lines, for instance. Correspondingly, the parts of vegetables and animals
which exhibit least activity of vital processes, such as the woody fibre
and osseous tissue, have the greatest hardness; while the nervous matter,
which is furthest removed from inorganic substance, is the softest and

most decomposable. The remarks on the chemical composition of organic bodies deserve particular attention, as showing the incorrectness of the common assumption, that the affinities which hold the elements together during life are different in their nature from those which dissever them after death. Reasons also are adduced for doubting whether the organic proximate principles have really such arrangements of their elements as are called ternary and quaternary.

We have next a condensed description of the elementary tissues in plants and animals, in which we can only take notice of one or two well-marked analogies. After describing the spiral vessels of plants, the author observes :

"A very curious analogy to this structure is exhibited in the tracheæ, or air-tubes, of insects, which ramify by minute subdivisions through the whole of their bodies. These tubes are formed, like the spiral vessels of plants, of an external membrane distended by spiral fibre, which is coiled with the most beautiful regularity; the principal difference in these two structures being that the air-tubes of plants are closed vessels, and that their gaseous contents find their way through the delicate membrane which composes them by the capability of permeation, which will be subsequently described : while the tracheal system of insects exhibits the most beautiful and minute ramifications, formed by the subdivision of its principal trunks, which communicate directly with the atmosphere." (p. 25.)

A little further on he shows how the *dotted duct* is a degeneration from the type of a spiral vessel, and then instances a similar departure from the original type in the irregular patches of cartilage distributed over the bronchial ramifications of the tracheæ. Between the adipose tissue of animals and those parts of the cellular membrane of vegetables which contain oil or gummy matter, stored up for the future nutrition of the organism, there is a striking resemblance. In both kingdoms, again, we find that the cellular, or most simple tissue, is most largely employed in the fabric of the higher organisms, and composes the entire bulk of the lower forms. In this respect the translucent globular tissue which clothes the skeletons of the porifera corresponds well with the "loosely aggregated gelatinous tissue which constitutes some of the lowest plants."

From the section devoted to a cursory view of the vegetable kingdom, which is intended to exhibit the principles of classification connecting the several groups, and to furnish as much natural history as may be requisite for understanding the subsequent departments of the treatise, we extract the following table.

"70. The affinities of the principal divisions of the vegetable kingdom may be generally expressed in the following manner:

Exogens. ....Endogens.

Gymnospermæ.   Rhizantheæ.

Ferns, &c.—Protophyta.—Fungi.
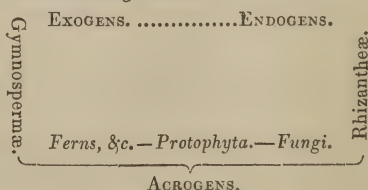
Acrogens.

Starting from the simplest algæ and lichens, we may pass, on one side, through the hepaticæ and mosses, to the ferns, the highest among the acrogens or cryptogamia. From mosses and ferns the transition is easy to exogens, through lycopodiaceæ and gymnospermæ. Exogens and endogens have many connecting links; and from the

latter group the return to the fungi is direct by the rhizantheæ; whilst the simplest forms of the fungi bring us back again to the protophyta." (p. 66.)

The connexions between the great divisions of the animal kingdom are traced in a similar manner. Thus, starting from the simplest forms of the acrita, we pass easily by the polypes to the tunicata, or lowest tribe of the mollusca; and from these by the cephalopoda to the vertebrata. From the vertebrata there is a ready transition to the articulata through the suctorial fishes (which have so strong a resemblance to leeches), or, as it regards *animality* of function, by the insects. The articulata are manifestly connected with the radiata, by the cirrhopoda of the former, and the holothuria and siponculus of the latter. We return from the radiata to the acrita " by numerous links of transition, such as the group of acalephæ, the actiniæ (which approach so near to some of the star-fish), and others. The circle of affinities may therefore be expressed in the following manner:

Vertebrata.   Articulata.

Cephalopoda.   Holothuridæ.

Mollusca. Acrita. Radiata.
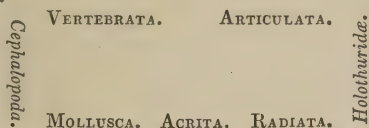
Again, the respective positions of the principal groups in the animal and vegetable kingdoms are set forth in a third and ingeniously devised table, which we cannot forbear introducing, for the sake of completing the view.

ANIMALS.   VEGETABLES.

Mollusca.   Ferns, &c.

Vertebrata.   Exogens.

Acrita. Protophyta.

Articulata.   Endogens.

Radiata.   Fungi.
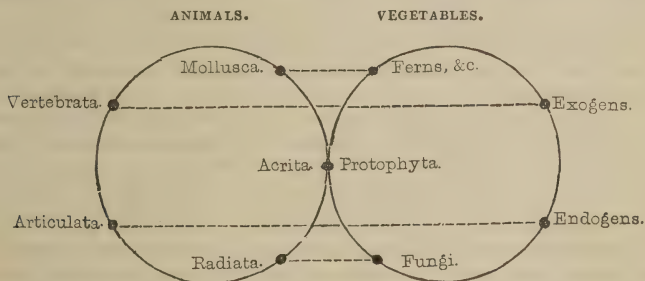
The section which treats of the Symmetry of organized Structures contains some important observations; but, having already devoted as much space as could be well spared to the introduction, we must pass on to the General Physiology, the first chapter of which treats of the *Nature and Causes of Vital Actions*.

The doctrine respecting Life now, it is to be hoped, prevailing among the best informed upon the subject, is ably set forth, and strengthened by additional facts and considerations. Regarding life in the abstract as synonymous with vital action, or, in any one living being, as the aggregate of phenomena by which that being is characterized, the author shows that, instead of looking for its cause in an imaginary vital principle, or organic agent, presumed to exist for the sake of explaining the phenomena, we ought to study the properties which organized structure enjoys, and the agents which produce their manifestation. Some observations are made in refutation of the doctrine of a vital principle, and we do not

think them supererogatory; for, although the hypothesis could have hardly been expected to survive the fine scientific thrusts of Dr. Prichard's classic weapon, or the strokes of Dr. Fletcher's more truculent blade, it seems even yet not quite extinct.   Mr. Carpenter argues on the super-fluousness of a controlling or presiding agent, intermediate to the will of the Deity and the phenomena of vital actions, when the latter can be reasonably assigned to the reciprocal relation between the properties which belong to organized structures and the stimuli which excite them. No agent can be required to adjust and regulate the actions which ensue from this mutual adaptation; since they are, like all other phenomena in the universe, under the control of laws inseparable from their very exist-ence.   The following passage will serve as a specimen of the manner in which the author treats this part of his subject:

" 147.   The term *law* of nature, as already employed, expresses the *conditions of action* of the properties of matter.   The divine Creator of the universe 'has, by cre-ating his materials, endued with certain fixed qualities and powers, impressed them in their origin with the *spirit*, not the *letter* of his law, and made all their subsequent combinations and relations inevitable consequences of this first impression.'   In other words, the unchangeableness of His nature is manifested by his continued action in the material creation, according to the same plan by which He at first adjusted the relations of its parts.   Our belief in the uniformity of nature, which leads us to seek for a common cause when a number of similar phenomena are presented to our ob-servation, is based not only upon experience, but upon the conviction which every believer in the existence of the Deity feels of His immutability.   If it were otherwise, we should be led by *analogy* only to infer the existence of law and order where none is evident; but the mind which is once satisfied of the existence of a Creator possesses a moral *certainty* that to Him must belong a Consummate Wisdom, which shall con-trive the attainment of every end by the best adapted means,—an Omnipotence, which shall have all these means at full command, and an Omniscience, which shall foresee in every action, not only its immediate, but its remotest consequences.   To imagine, therefore, that the plan of the universe, once established with a definite end, could require alteration during the continuance of its existence, is at once to deny the perfection of the divine attributes; whilst, on the other hand, to suppose, as some have done, that the properties first impressed upom matter would *of themselves* con-tinue its actions, is to deny all that revelation teaches us regarding our continued dependence on the Creator.   Let it be borne in mind, then, that, when a *law* of phy-sics or of vitality is mentioned, nothing more is really implied than a simple expres-sion of the *mode* in which the Creator is *constantly* operating on inorganic matter or on organized structures." (p. 134.)

It excited our surprise, when reading the physiology of Müller, to find him clinging to a notion which it is high time should become obsolete. His "organic force" corresponds in most respects to the "vital principle." " Life," he says, " is not simply the result of the harmony and reciprocal action of these parts; but is first manifested in a principle or imponde-rable matter which is in action in the substance of the germ, enters into the composition of the matter of this germ, and imparts to organic com-binations properties which cease at death."*   We can only account for the retention of such an opinion in the mind of one who generally thinks so accurately, by the strong intuitive tendency, inherent in every one, to suspect the operation of hidden agents; an instinct, which is, for the most part, beneficial by stimulating to a more minute investigation of pheno-

* Müller's Physiology, by Baly, p. 28.

mena, but which may be excessive by preventing us from ever recognizing the adequacy of causes for any given event. Dr. Thomas Brown has finely shown the effect of this tendency in the popular notion of *power*.

Vital properties and vital actions are legitimate objects of enquiry; the former being, like all other properties, the expressions of our experience respecting the bodies of which they are predicated. A property is the capability of acting, or susceptibility of being acted upon, in a certain manner, under certain circumstances; but it can only be ascertained to exist in a substance by means of the actions which it either engenders or suffers. A vital action is one that is only observed in an organized body under the operation of certain stimuli; and, correlatively, the capability of exhibiting such an action is called a vital property. The question then occurs, by what means have organic bodies become possessed of such properties? In any other case it would be deemed sufficient to look to the constitution of the substance, and the circumstances in which it is placed; but, in the present instance, physiologists have thought proper to suppose the properties to be communicated *after* the substance has been organized, as if properties were entities susceptible of addition and subtraction. This mistake has, we apprehend, originated in part in the erroneous confounding of properties with *causes*. Vitality is not a cause of vital action, but the character of a body which displays such action; the cause must be sought in the events which have preceded the constitution of the body itself. A substance cannot be endowed with new properties without undergoing some change in its own condition, of which altered state these properties are the necessary attendants. The author adverts to a supposed illustration of this communication of properties to matter, which did not before possess them, in the case of iron, on which magnetic properties have been superinduced: but even in this instance, as he justly remarks, the magnetic properties are developed only because the conditions of the metal itself are altered; and, in like manner, "the act of organization develops vital powers in the tissues which it constructs."

We have both seen and heard it maintained that life cannot be the result of organization, because the existence of the latter implies a previous action of the former. It is true that we only know organization as the result of vital action; but not less true is it that we know nothing of vital action, as separate from organized structure. Trace the living being back to its germ; that germ is the product of vital action, but the action is in the tissue of the parent; and, in pursuing the backward course, we arrive at the creation of species. Shall we believe that God created a vital principle, or an organic agent, and then set it to organize the body? Surely it is, to say the least, more natural to conceive that the organized species, whether a germ or a mature being, was, *quà* organized, vital, or capable of exhibiting life as soon as the appropriate stimuli should be applied. But while we believe that life is thus begotten, as it were, of external agents upon organized structure, we must never lose sight of how much is implied in the latter.

The dependence of the vital properties on the structure, Mr. Carpenter enforces by a consideration of the nature of death; showing that when integrity of the organization is maintained by the continuance of its vital

action (particularly nutrition), the change of structure consequent on the cessation of the action necessarily involves the loss of vitality. *Molecular* Death, so designated and distinguished by Dr. Symonds from *systemic* or *somatic* death,* may in most cases be said to consist in the cessation of vital action in the part, because the latter, as we have just observed, necessarily deprives it of its vital properties by producing its disorganization. But there are exceptions to this statement in the case of seeds which retain their vitality for an almost indefinite period, though it cannot be said that they are the subjects of vital action; and also in certain animals of comparatively simple organization, in which life may be suspended for a considerable time without deprivation of vitality. Thus Mr. C., and others, have found that the wheel-animalcule may be reduced by desiccation to a state in which vital action not only appears extinct, but which would seem quite incompatible with its continuance; yet, on the restoration of moisture, life returns. In both these cases the structure is not readily susceptible of decomposition from the operation of ordinary external agents; and, consequently, its integrity is not dependent on the continuance of vital action; and being unimpaired in organization it retains its vital properties.

The author notices those actions and properties in organized tissues which are of a purely physical nature, such as elasticity, and endosmose; and then adduces strong reasons for believing that certain affinities usually considered vital, or not reducible to the ordinary laws of chemical attraction, are really identical with the latter, the *conditions* under which they act being so complicated that we are at present unable to imitate them. The affinities alluded to, we need scarcely say, are those by which the organic proximate principles, such as sugar, gum, albumen, &c. are formed from the nutriment introduced into the living system. Could we place these elements in the same mutual position and under the same agencies, as in the organized being; could we, in fact, adjust the temperature, the moisture, the electricity, the light, and the heterogeneous atoms to be acted upon, just as they are employed in the laboratory of nature; we entertain not the slightest doubt that the ensuing actions would be the same, and that they would be found to be governed by the same laws of chemistry as regulate even inorganic processes. Independently of this consideration, it must be remembered that the laws of inorganic chemistry are as yet so imperfectly known, that it would be presumptuous to pronounce any molecular combination to be beyond their influence or control. The following remarks should be well weighed by those who are too prone to infer a new law or power from facts, apparently irreconcilable, with what knowledge they possess.

"Those who have attended to the progress of chemical science during the last few years can scarcely hesitate in the belief that we as yet know little of the laws which govern the changes in the constitution of bodies, compared with what future discoveries will reveal to us. Many phenomena of inorganic chemistry, which can now be readily explained, would have been regarded, within a very recent period, as quite incomprehensible. Would it have been thought possible, for example, by a chemist thirty years ago, that the same substance should act the part of an *acid* in one case, and of a *base* in another?—that *water* should be possessed of such properties?—or, still more, that *muriatic acid* should act as the *base* or electro-positive ingredient in

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* Cyclopædia of Anatomy; Art. *Death.*

combination with the chloride of platinum?   These facts would have appeared to a chemist, at the commencement of the present century, totally inconsistent with what he knew of chemical action; but they are now readily comprehended, as results of laws which, being higher and more general than those previously known, include facts that at first sight appeared inconsistent with them.   Unless, therefore, a distinct set of laws could be established, regulating vital affinities—which has not been accomplished or even attempted—we are scarcely justified in assuming that these laws may not be accordant with those which we resognize elsewhere." (p. 147.)

After deducting those actions which are unequivocally physical, as well as the more questionable processes of organic chemistry, the author allows that there remains a vast chaos, which must be regarded as *essentially* vital; by which we presume he means that they are not only confined to, but that it is impossible that they should occur in any but living organized structures, since they require properties which are not to be met with in any other substances; while, on the other hand, the formation of the proximate principles may demand only the play of the general properties of matter under peculiar limiting conditions, which it may not be beyond the reach of art to imitate.   As instances of the purely vital actions, the author adduces the conversion of organic compounds into the substance of living tissues.   We cannot help noticing that in this place he uses a phrase inconsistent with the views elsewhere stated. Thus, he speaks of the compounds "being converted into organized tissues, and *endowed with properties*," &c. and, again, of a process concerned " in assimilating, *organizing, and communicating vital properties* to nutritious matter."   Now, if the view which he has taken, and which we have supported, of the connexion between organization and vital properties, was well-founded, it is incorrect to use such phrases as those which we have marked in italics, since the organizing is, in fact, the same thing as communicating vital properties, that is, forming a structure the essential character of which is the possession of such properties.   We readily admit that such slips of expression are very pardonable in writing on such a subject, but they are, in the present instance, in too close a juxta-position with the argument which demonstrates their impropriety, to allow of our passing them entirely *sub silentio*.

The second chapter treats of the *Vital Stimuli*.   These are principally those external agents which, if they do not act immediately upon the properties of the higher organisms, are essential to the elaboration of the fluid which at once supplies the materials of growth and secretion, and stimulates the tissues to their proper functions.   The influence of nervous matter upon the irritability of muscular fibre is an instance of an *internal* stimulant.   The agents which excite the functions of relation, such as the stimuli of sensation, and of such muscular actions as do not directly conduce to the maintenance of life, Mr. C. is unwilling to include under vital stimuli; but his objections are not, in our opinion, altogether valid.   Sensibility and muscular contractility, whatever be the ends to which they may be made subservient, are unquestionably vital properties, the term being used in the sense which the author generally follows, viz. peculiar to organized structure, and therefore any influence which calls them into exercise may be fairly designated a vital stimulus.   The author notices *sneezing* produced by irritation of the nostril, as an action excited by a stimulus not deserving the character *vital*, because the operation is but very remotely connected with the continuance of life.   Yet this action

appears to us rather more important, since its object is that of forcing a sudden and impetuous current of air through the nostrils, in order to expel any substance obstructing those passages; being precisely of the same nature as coughing, the object of which is to clear impediments from the bronchi and trachea.

Food and air, as vital stimuli, are considered under Absorption and Respiration. The present chapter is devoted to the influence of *Heat*, *Light*, and *Electricity*, and contains a great variety of interesting facts, many of which were new to us. What extremes of temperature are required by different vegetables, is well illustrated by the protococcus nivalis, or *red snow*, which flourishes only on the frozen tracts of the Arctic regions; and by certain confervæ which have been found growing in boiling springs. The influence of heat in destroying the vitality of seeds is physical. Water at 144° causes the rupture of the vesicles of starch, and being thus disorganized the seeds cannot germinate; yet these bodies will bear exposure to a degree of cold equal to that of frozen mercury. Many animals are enabled to bear extremes of temperature by their power of modifying it; but in some which have not this power, it is found that a high degree of heat is compatible with vital action: thus fishes exist in the thermal springs of Barbary, at a temperature of 172°. The different degrees of *light* required by different vegetables, are exemplified in the cryptogamic plants which grow on the northern sides of trees and towers, while other plants can only flourish under the powerful rays of a tropical sun. The influence of light in retarding germination is very interesting, because "to the chemical process which this requires, light would be decidedly opposed, tending as it does to *fix* carbon in the system, instead of favouring its liberation." Mirbel relates a striking fact in proof of the influence of light on the development of vegetable organs.

"He found that up to a certain period of the growth of the little *gemmæ* of the Marchantia polymorpha, it appeared indifferent which side was uppermost; for that, on the surface of the foliaceous expansion, exposed to the light, *stomata* would always be formed, while, from the under surface, roots would be protruded. After the tendency to the formation of these organs had once been given, however, by a sufficiently protracted influence of light above, and of moisture beneath, it was in vain to attempt to alter it; for if the surfaces were then inverted, they would be restored to their original position by the twisting growth of the plant." (p. 157.)

We have not space for pursuing further these and other interesting details regarding the vital stimuli; else we should have been glad to have quoted what is said of the capability which certain salt-water and fresh-water fishes possess of bearing a change in their medium, if this is effected gradually, while others are soon disordered and die when removed from salt to fresh water, or from this to that. Some of the littoral mollusca it seems are fond of variety, for they fix themselves to rocks at the mouths of rivers, where with the alternation of the tide they enjoy corresponding changes in the quality of their element.

The *Laws of Organic Development* are explained in the third chapter, under the several heads of Unity of Composition—Progressive Development—Eccentric Development—Balancing of Organs—Harmony of Forms. This high department of physiology is managed with the same ability which pervades the other parts of the work, both in the announce-

ment of the laws, and in their exemplification; but on the first, or the Unity of Composition, there appears to us to be some little obscurity or confusion of statement; for while it is maintained, and justly, that no fundamental unity of structure between the various classes of animated beings can be founded upon similarity of external form, or even upon analogy of function, yet the author appears to determine the community of structure by what he calls " the essential characters," and " the real analogies," which seem to have reference to a structure fitted for a particular action. Thus, he notices the diversity of form in the respiratory apparatus of different animals, and shows how they agree in the possession of this character, that " a membrane should be in contact with air on one side, and with fluid on the other." Surely this " essential character," has reference to the function, that is, the action between the air and the fluid; if not, it belongs also to the tegumentary and some parts of the digestive apparatus. But how apply this to the swimming bladder of the fish which is a rudimentary lung? There is a " real analogy" (being purely structural) between these parts, but no community of function. It does not, to our apprehension, remove the difficulty to say that a portion of the respiratory apparatus is "modified to adapt it to the condition of the structure at large." Indeed, with reference to this very instance, Mr. C. observes that it proves the necessity of disregarding function in investigations of this nature; a remark which we know not how to reconcile with what was said of the essential character of the various forms of respiratory apparatus. The truth appears to be, that a character is essential or not, and an analogy real or not, according to the view which, for the time being, we are taking of a number of organs. If it be for the purpose of finding a community of *function*, then the essential character must be the structure which is needed by the function, and which is a true analogical character. But if we are viewing them with reference to their unity of *structure*, the analogies we look for must be sought in the mere anatomical elements; thus the elements which compose the tympanal bones of the fish are the *ossicula auditûs* in higher organisms, and the scrotum of the human male is the analogue of the female nymphæ. The determination of these structural analogies can be only attained by profound and extensive zootomy, conducted through the various metamorphoses of organs, in different classes, or in the same individual at different periods. The theoretical result of such researches is that the great divisions of living beings have an identity of structural elements, which variously compiled, and developed in ever-varying degrees, produce organs whose forms and functions are infinitely diversified, according to the plan on which the class or species is formed. It strikes us, then, that the author has applied to the law of unity of structure, or identity of elements, illustrations which belong to " unity of function." To set forth the difference between a functional and a structural analogy in a still clearer light, we may take one or two examples. Thus the lung of the batrachia and the gills of the fish display a functional unity, but the former has its structural representative in the air-bladder of the fish, while the anatomical elements corresponding to the gills of the latter will be found in a rudimentary or atrophied state. Again, the pectoral fin of a fish, and the wing of a bird, have no analogy of function, but their anatomical elements are the same, though developed

in different proportions; and, on the other hand, the wing of a bird, and of an insect, share a character of analogy as close in point of function as any two specimens of respiratory organs, namely, a structure which, by its expansion, lightness, and mobility, may serve for supporting or impelling the animal in air; but the anatomical elements of the two are utterly different; for the one is moulded out of the anterior extremity of a mammal, the other of structural elements which correspond to the respiratory apparatus in earlier periods of development.   That the author has in his eye rather a unity of function than of *composition*, we should gather from the following statement: "Throughout the whole animated Creation, then, the essential character of the organs which all possess in common, remains the same; whilst the mode in which that character is manifested varies with the general plan upon which the being is constructed." (p. 168.)   The organs hinted at are organs in the strict sense of the word—*instrumental structures*—and their essential character is that part of their structure which is essential to their instrumentality, though it may be embodied in very different forms.   The statement is, we consider, perfectly true, and it is thus interestingly illustrated.

"Thus, in the lowest plants, as in the embryo-state of animals, the whole surface is modified for absorption of nutrient fluid; and the only change in the character of this absorbent surface in the higher vegetables consists in its restriction to a certain part of the structure, the root, which is developed so as to bring it into most advantageous employment.   In animals, a change of a different character has become necessary to adapt the function to the conditions of their being; and we find the absorbent points distributed not upon the external surface, but upon an inversion of it, adapted to retain and prepare the food.   Still the same fundamental unity exists; and the spongiole of the vascular plant, and the origin of the absorbent vessel in the animal, have precisely the same essential character with the membrane which constitutes the general surface of the Sea-weed or Red Snow.   The advance from the lowest to the highest form in each kingdom is extremely gradual; and there are links of connexion between the two principal modifications of the structure, a plant exhibiting something like the digestive cavity and absorbent system of the animal, and certain animal forms absorbing from their general surface like the lowest plants." (p. 168.)

The remarks on Progressive Development are at once sound and lucidly expressed.   The gradual concentration, or specialization, in the higher system of the diffuse organs which prevail in the lower is thus stated by Von Bär.   " A heterogeneous or special structure arises out of one more homogeneous or general; and this by a gradual change."   Another law somewhat restrictive of this has been discovered by Mr. C., and is thus expressed.   " In cases where the different functions are highly specialized, the general structure retains, more or less, the primitive community of function which originally characterized it."   Thus, though the absorbent function is highly specialized in the more complex organisms, yet every part of their surface still exhibits the primitive function, by its capability of admitting the passage of fluids into the interior of the system.   But our limited space obliges us to take leave of this interesting subject.   We can only remark, in passing, that we agree with the author in regarding Cuvier's " harmony of forms" as the result of other laws of development.   " It is evident that if it were deficient, the race must speedily become extinct, the conditions of its existence being no longer fulfilled; these conditions being, for the whole organism, what the vital stimuli already described are for its individual properties." (p. 176.)

Chapter IV. contains a *General View of the Functions* and their mutual relations. First, we find pointed out the antagonism between the functions which maintain individual life and those which continue the species; next, the distinction between those of organic, and of animal life; and then a rapid view is taken of the characters and the connexion of the several functions which are treated of in detail in the special physiology,—viz. Absorption, Digestion, Circulation, Interstitial Absorption, Nutrition, Respiration, Secretion, Reproduction, Muscular Contraction, and the Functions of the Nervous System. The facts adduced in proof of an antagonism between nutrition and reproduction are highly interesting. For instance, while individual algæ attain an enormous size, (some species having a length of many hundred feet), their fructifying system is often obscure. On the other hand, the Fungi seem to consist of little else than reproductive organs, and after maturing their germs, the end of their being seems accomplished, for they then die. The same relation holds good in the flowering plants; and hence, in order to obtain fine fruit, that is, to give great development to the generative system, the gardener restrains the luxuriant growth of the plant, by pruning, or " limits the supply of food by trenching round the roots." The animal kingdom furnishes illustrations of the same antagonism. " Thus, in the larva condition of the insect, the assimilation of food, and the increase of its bulk, seem the sole objects of its existence." The imago or perfect insect, on the other hand, lives only to reproduce, and often dies without having taken food. In the young human subject, the generative system is dormant, while nutrition is in its greatest activity; and in adults, as Miss Martineau well knows, reproduction is apt to go on in an inverse ratio with the means of subsistence.

The author gives excellent reasons for withholding assent to the notion that " nervous agency" is essential to nutrition and secretion, though they are readily influenced by it. In vegetables these processes are highly complex and elaborate, and yet no trace of a nervous system has been discovered in this class of beings, nor indeed in the lowest animals, while " in the higher classes we find such an apparatus developed, just in proportion as the necessity arises, from the complication and specialization of the organic functions, for their being harmonized and kept in sympathy with each other and with the conditions of the animal system, by some mode of communication more certain and direct than that afforded by the circulating apparatus, which is their only bond of union in plants." (p. 184.)

It would be quite beyond the compass of this article to offer an abstract of the special and comparative physiology; but desirous of enabling our readers to form some estimate of the manner in which this department is executed, we shall, instead of culling from the different chapters facts and arguments which would be necessarily unconnected, prefer the plan of following the author through his treatment of a single function. The circulation will serve this purpose, conveniently to ourselves, and favorably but not *partially* to the author.

In the simplest organisms, both animal and vegetable, every part of the surface absorbs the nutrient fluid with which they are surrounded, and consequently they have no need, as in more complex forms, of an apparatus for conveying to the different parts a fluid ingested by a par-

ticular apparatus. Correspondently with this fact we find that the development of the vascular system is, in all classes of living beings, " proportional to the degree of limitation of the power of absorption, by which the parts imbibing aliment are insulated from those requiring supplies." But besides the conveyance of nutriment to the tissues, and of supplying a constant stimulus to their appropriate actions, the circulation fulfils the object of carrying the alimentary fluid to that part of the system in which it is to be subjected to the influence of the atmosphere.

The circulation in vegetables is first described. The first approach to a circulating apparatus (altogether wanting in the algæ) may be traced in the elongated cells which we find in the stems of the lichens. In this tribe, as "the power of absorption is usually restricted to the side least exposed to the light, more capability of diffusing the nutrient fluid is required; and it appears that when the absorbent surface is placed in water, the liquid is transmitted in the course of the elongated cells to the whole plant." In the higher fungi a distinct conveyance of fluid takes place from the radical fibres, through the elongated cells of the stem and the intercellular spaces, to the expanded summit of the plant. In mosses, the cells in the stem and veins of the leaves are so elongated, as almost to resemble woody and vascular structure, while the ferns possess dotted and reticulated ducts, like those of the phanerogamia, and may therefore be inferred to convey the same kind of fluid, though little has been actually observed as to the circulation of sap in this order of plants. The course of the sap in exogens is well known ; but this cannot be said of endogens, though there is good reason for believing that it ascends by the ducts and woody fibre, and returns along the cellular portion of the stem. The author is of opinion that the ascent of the sap depends on two sets of causes; one the propulsive motion in the roots, by endosmose, the other the attraction upwards, occasioned by the vital processes in the leaves. The motion of the descending sap is owing essentially to the nutritive processes which it supplies, but it is promoted by gravitation and the vibrations of the stem produced by wind. The following remark has very important bearings.

"If the description given by Schultz, and confirmed by other observers, of the motion of fluid witnessed by them, really applies to this general circulation of nutritious or elaborated sap, it obviously bears a very close analogy with the movement of the blood in the capillary vessels of animals; since this also would seem less dependent upon the *vis a tergo* or impulsive force of the heart, than upon the new set of attractions and repulsions created between the particles of the fluid and the surrounding tissues, by that mutual action in which the process of nutrition consists. This *vital circulation*, as it has been termed, may be seen not only in detached parts, in which it continues for some time, but also in the growing plant." (p. 227.)

The progressive development of the circulating system in vascular plants corresponds with the gradations which we have noticed in the different orders. The embryo within the ovule absorbs from its whole surface, and therefore needs no particular channels of transmission for the nutrient fluid; but, as it lengthens in the process of germination, the fluid is conveyed as in fungi by elongated cells and intercellular passages. When the true leaves are expanded, woody or vascular structure becomes distinct, but it is curious to observe that the ducts after assuming a spiral disposition in young plants, are afterwards converted into the dotted form.

The preliminary remarks on the circulation in animals are excellent: our space, however, scarcely allows of extract; but we must quote the following observation:

"In proportion as the function of absorption is restricted to one part of the surface, that of respiration will be limited to another; and the processes of nutrition, and the formation of secretions will go on in parts of the structure distant from both; and all these must be brought into harmony by vascular communication, the arrangement of which will evidently vary from the most simple to the most complicated form, according to the number and variety of the offices to which it is subservient." (p. 229.)

The porifera, as regards their independence of a circulation, are in the same predicament as the lowest cellular plants. The appearance of vessels in some of the infusoria described by Ehrenberg, the author is disposed to ascribe to the reticulated distribution of the digestive cavity. In the radiata we discover the first traces of a circulating apparatus, not however in the acalephæ, (the canals of which are only prolongations of the digestive cavity and convey a crude not an elaborated fluid,) but in the echinodermata. In these animals there is "a gradual restriction of the digestive cavity, to the central portion of the structure." Thus, in the asterias, a vessel lies on the surface of each alimentary canal and is connected by minute branches with the cæca. The vessels from the rays join with those of the stomach, and form a ring round the upper part of the body, and this circular vessel is connected with a similar ring, surrounding the anus, by descending branches. The echinus possesses a contractile cavity, the first trace of a heart, near the anal termination of the intestine; but in the holothuria a pulsating vessel accompanies the intestine, analogous to that of the articulata. In this class, the principal sources of impulse to the circulating fluid are the active capillary processes of nutrition and respiration, aided by the muscular movements of these animals. The respiration being all but universal in insects, from the numerous tracheæ, there is but little distance to be traversed between these parts and the tissues. In the mollusca, on the other hand, a concentrated organ of impulsion is required by the insulation of the respiratory apparatus, and by the torpid habits of this class. We shall not follow the author in his very clear and exact description of the modification of the circulation in the upper classes; but it gives us much satisfaction to notice that, although allowing that in animals possessing a muscular heart the *vis a tergo* is the *chief* agent in the circulation, he yet maintains that the nutritive and secretory changes in the tissues (which may be expressed by the term *capillary power,* provided we do not imply a contraction of the capillary vessels,) have still some share in maintaining the motion of the blood in the vessels, and certainly modify in a great degree the quantity supplied to different organs. This capillary power which is the only source of motion in the lowest plants and animals, becomes gradually subordinated, as we ascend the scale, to the central impulsion, but is never entirely abolished. This position is, we think, rendered perfectly impregnable by the facts with which the author surrounds it. To state them in brief:—The continuance of the blood's motion in the capillaries of cold-blooded animals, after excision of the heart—the emptying of the arteries after slow natural death—the continuance of secretion after the cessation of the heart's action—the irregularities in the capillary currents, and their unequal velocity, as observed

under the microscope—the increased determination of blood or *turgor vitalis* in organs which have a temporary increase of function—the augmented supply in morbid conditions of parts though the heart is not pulsating more forcibly than natural—the arrest of the pulmonary circulation in asphyxia, prior to the cessation of the *vis a tergo*—the movement of red blood in the embryo before any pulsating vessel can be seen (a fact proved by Von Bär, though doubted by Dr. Allen Thomson, and others,)—the movement of red globules in coagulable lymph before any communication with adjoining vessels—and, lastly, the circulation in acardiac fœtuses, of which a memorable example has been described by Dr. Houston.* Of this last instance, it is observed, " From a careful examination of the vascular system, it appeared impossible that the heart of the twin fœtus could have caused the movement of the blood in the imperfect one; and this must, therefore, have been entirely similar to the circulation of elaborated sap in plants, being maintained by the nutritive changes occurring in the capillaries; an effect not the less certain because we are as yet unable to explain it satisfactorily." (p. 250.)

The embryonic development of the circulating system successively imaging, in a single individual of the higher classes, the permanent states in the inferior gradations, is treated with a degree of fulness, proportionate to the importance of a subject which reflects so much lustre on modern science.

The chapter concludes with a concise account of the principal malformations of the heart and the aorta in the human subject.

We must reluctantly pass over the intermediate chapters, in order that we may glance at the author's views of Reproduction in Vegetables; views, which bear the stamp no less of truth than originality. The general considerations respecting this function are well worthy of attention, more especially as some remarks on the limits within which the doctrine of *equivocal,* as distinguished from *spontaneous* generation may be rationally maintained.

Reproduction, like absorption, respiration, &c. is performed by every part of the simplest plants, but in the higher orders we find it restricted to a special organ. Of the former, the Protococcus nivalis is a remarkable example. Each vesicle of this plant contains granules, susceptible of development into cells resembling the parent vesicles. These, after bursting and thus destroying their envelope, escape from it, move spontaneously in the water, and also generate within themselves new cells which are in like manner burst by the embryo within them, and are disorganized. Thus the whole of the structure is concerned in reproduction.

" The same process will be found to take place in the highest plants, with this difference,—that as the whole system is not concerned in the formation of the embryo, but only a very small portion of it, that portion alone ceases to exist as soon as its function is performed, the life of the parent remaining uninjured. In the higher cryptogamia, the reproductive cells, containing the germs, are distinct from the rest of the structure, and are developed only from a particular part of it; they are denominated *spores.* And in the phanerogamia this is also the case, the reproductive cells being there termed *pollen*; but an additional organ is here developed, for the purpose

* Communicated to the British Association in 1836. See our 2d Vol. p. 596, or Dub. Med. Journ. 1837.

of receiving and nourishing the embryo on its first liberation, and of thus enabling it to advance ultimately to a more exalted condition than it could have attained if left to its own resources from the beginning.   In all instances the reproductive cells have essentially the same character.   They contain an immense number of minute granules, swimming in fluid, and endowed with a peculiar spontaneous motion, which may be observed both before and after their liberation." (p. 397.)

In the higher algæ, the function is somewhat more insulated; some of the cells, which by their union constitute an individual, containing no granules, others evolving them abundantly.   The germs after escaping by pores, as in the confervæ, move actively about.   But in the fucoideæ, they are more inert and are conveyed by gravitation to the places fit for their development.   In some of this class, a particular portion of the surface is devoted to the formation of the granules.   Lichens are propagated by much the same method, excepting that in some of them the process is more similar to *germination.*   But of the fungi the whole structure seems devoted to the reproductive system.   This system in the *mosses and ferns* is represented by spore-cases or thecæ, which occupy a smaller and smaller portion of the plant, the higher we ascend the scale.   The spore is the only organ of generation in these vegetables.   The capability of producing a germ which may develop itself into a new plant, seems to be an essential property of the cells which have been designated as reproductive, just as the power of developing additional vesicles, which may remain parts of the same organism, is an attribute of those which belong to the nutritive system.   The spore is then shown to correspond to the pollen-grain.   Each contains the green germs or granules floating in a liquid, and each consists of two coats, the inner being very delicate.   In the development of the spore the outer coat splits, and the inner is protruded in the form of a tube containing the granules; insulated portions of this tube are capable of reproduction.   Into the account of the further evolution we have not space to follow the author.   In the marsillaceæ, intermediate to the ferns and phanerogamia, we first meet with an *ovule,* which is a receptacle containing nutriment for the spore.   In the marsilea the spore-cases, analogous to *anthers,* are inclosed with the ovules in a common envelope, and there is a direct communication between them. Neither of these parts can generate independently of the other.   The essential organ in phanerogamia, as in cryptogamia, is the part which produces cells containing germs, and which is called the *anther,* the pollen-grain of which is analogous to the spore.   The pistil is nothing more than a tube which conveys the germs, liberated from the pollen, to the ovules at its base; where they receive a special nutriment prepared for them and which is essential to their evolution: in this respect differing from the spores of cryptogamia, which depend on the nutriment found in the surrounding medium.   The correspondence between the changes in the spore and in the pollen-grain is made out in a very interesting and satisfactory manner; and not less so between the early development of the embryo of the phanerogamia within the ovule and the evolution of the germs of cryptogamia; as well as the " general analogy between its transitory condition at different epochs and those which are permanent in the lower grades."   The following is the concluding paragraph of this interesting section.

" In tracing the progressive evolution of the special reproductive apparatus in

plants, we observe that although it is gradually separated from the nutritive system, in proportion as we ascend the scale, it is never entirely disconnected with it.   It was formerly stated that all the parts of the flower may be regarded as metamorphosed leaves; or, more correctly, as metamorphosed forms of the elements of which leaves are the types.   Even the stamens and carpels are proved, by the frequent occurrence of monstrosities, to have this character.   The former often present the appearance of leaflets thickened at their edges by the formation of pollen; and these reproductive vesicles are themselves found, by observation of their early development, to differ but little in essential character or mode of production from any other form of cellular tissue.   The carpels, moreover, are proved to be leaves, not only by such monstrosities as the one formerly mentioned, but by the fact of their bearing *ovules* at their edges; for these ovules are essentially *buds*, (as may be seen in particular abnormal instances), like those developed from the edges of various leaves, such as those of the *Malaxis paludosa* (Bog-orchis), and *Bryum colycinum* (one of the air-plants of the tropics), which are capable of developing themselves either separately or while still attached to the parent structure.   The special reproductive organs of the cryptogamia might probably be reduced to similar elements, if their monstrosities were observed; thus, the *sori* of the ferns have been seen to be replaced by clusters of leaflets, each of them representing a metamorphosed theca." (p. 403.)

We are glad to observe, that it is the author's intention to publish his views on vegetable reproduction more at large in a separate work.

The section on Generation in animals, presents very striking analogies between the function in this kingdom and that in vegetables.   But the author has been rather shackled in his illustrations, by his laudable desire of handling the subject in such fashion as need not offend the delicacy of general readers, for whose instruction he wishes to cater as well as for the professional student.

We give a brief extract from the first paragraph:

" In the *gemmiparous* propagation observed in many of the polypes, the new being is obviously nothing but an increased development of a part of the parent structure, and exactly corresponds with the bud of a plant; a similar mode of increase seems to exist in some of the simpler entozoa, where the young sprout from the interior of the cavity of the parent, and swim about, after their separation, in its contained fluid. The *fissiparous* generation, as it is called, is evidently but another form of the same plan; the parent structure not putting out a smaller and younger bud, but dividing itself into parts of which each has the power of reproducing the whole.   It is among the infusoria that this mode is most characteristically seen.   Thus, the Paramœcium divides itself transversely, the division at first appearing like a notch, and gradually extending itself across the body, until the halves are completely separated.   Some species of Vorticellæ divide themselves longitudinally in like manner; and instances still more curious might be mentioned.   Amongst many higher animals this mode of increase is practised, as already stated; but it is seldom that a more special reproductive apparatus is not also developed.   The object of this apparatus, in animals as in plants, is to form and mature a germ, which, from the time of its first organization, is destined to be the rudiment or embryo of a new being, and which is separated from its parent, in the first instance at least, in a form altogether dissimilar to that which it is ultimately to assume." (p. 403.)

We had purposed extracting Mr. C.'s observations on the nervous system of the articulata, but we must be content with directing particular attention to them.   Enough has, we trust, been said to induce the reader to take the earliest opportunity of carving for himself at the rich entertainment which this book affords.   For ourselves, we cannot express the satisfaction we derive from the method of studying physiology, which has arisen out of the comparative anatomy and natural history of the present age, and which was never more fully and faithfully worked out than in

the present volume: a happy exchange, indeed, for the old system, on the one hand, of speculating " *de usu partium*," and presumptuously placing a human mind in the position of the Creator, so as by its precognition of the final cause, to dogmatize at once on the quality and order of the phenomena presented to its observation; and, on the other hand, for the too prevalent practice of putting Nature *to the question*, or at least compelling her to betray the secrets of her agency in the groans and writhings of the very organisms on whose happiness she has bestowed such a prodigality of resources and such exquisite artifice.   We infinitely prefer listening to the philosophers who repeat the beautiful tale which nature has *spontaneously* whispered to them; for our kind mother shows not reserve towards those who in a due spirit of humility have enquired at first respecting the simpler of her works, and thus gradually prepared themselves for comprehending her more marvellous and complex operations.

The literary execution of this treatise, is on a par with its scientific merits.   The style is adapted to the subject, simple, vigorous, and translucent.   Ornament would be misplaced; but the language occasionally rises into eloquence.   The author has adopted the use of numbered paragraphs; a plan which has many and great advantages, for the purpose of reference, but which is not altogether unattended with inconvenience. That which most strikes us, is the temptation which it affords, of trusting too much to the paragraphic divisions of the argument, and not marking them sufficiently by those particles and connecting phrases which so much aid its comprehension in minds not familiar with the subject.

Six plates are appended, full to overflowing with illustrations, executed in a manner no less creditable to the artists, than useful to the student; and we are glad to see that great pains have been taken with the explanation of the individual figures.   An elaborate index closes the volume, a most important feature in a work like this, but not always regarded by authors.

On the whole, we must be allowed to say that no treatise on physiology which has hitherto appeared in our language exceeds the present, either in the comprehensiveness of its principles or in the value and abundance of its facts.   Of many of the views, the author may fairly and proudly claim the paternity; but where he has adopted the opinions of others, it is plain that he has thought out the subject for himself, not passively received the ideas.   The work is unquestionably unique in plan; and, while we have in no part found it lagging behind the most recent steps of modern science, it has in many instances appeared quite in advance of it.   Had we seen the book in manuscript, our *imprimatur* would have been inscribed, not in its usually permissive, but in its absolutely imperative sense.   After this, it is hardly necessary to recommend it formally to all our readers, and to men of science of every description.   The volume is dedicated to Sir John Herschel; and we know not, in the whole range of modern medical literature, a production more worthy of his notice, or more truly conceived in the high and philosophical spirit which distinguishes his own writings, and has added fresh lustre to a name already immortal.

<div style="text-align:center">ART. X.</div>

1. *Historisch-kritisch Darstellung der Pockenseuchen, des gesammten
Impf-und Revaccinationswesens im Königreiche Württemberg, inner-
halb die fünf Jahre Juli,* 1831, *bis Juni,* 1836. Von Professor
Dr. FRANZ HEIM, K. Württ. Regimentsarzte, &c. &c.—*Stuttgart,*
1838. 8vo. pp. 651.
*Historical and Critical View of the Small-pox Epidemics, and of the
entire Vaccinations and Revaccinations in the Kingdom of Wirtemberg,
from July,* 1831, *to June,* 1836, *inclusive.* By Professor FRANCIS
HEIM, M.D. &c. &c.—*Stutgard,* 1838.

2. *Resultate der Revaccination in dem Königlich Würtembergischen
Militär, in den Jahren* 1833, 1834, *und* 1835. Von Professor HEIM.
—*Ludwigsburg,* 1836. 8vo. pp. 100.
*Results of the Revaccination in the Royal Wirtemberg Army, in the
Years* 1833, 1834, *and* 1835. By Prof. HEIM.—*Ludwigsburg,* 1836.

THE casual observations on the subject of revaccination which we felt
ourselves called upon to make in our last Number, when reviewing the
very interesting work of Dr. Baron, will have prepared our readers to
expect a more detailed examination of this all-important question. The
discussion of the rise and progress of vaccination is so intimately blended
in every particular with the life of Jenner, and has been so judiciously
made a prominent feature in the biography recently completed by
Dr. Baron, that the objections formerly urged, and others more recently
brought forward, against the practice of vaccine inoculation, as well as
the facts and arguments by which these objections are met, must be fresh
in the minds of all. Whether these objections are valid or not, whether
they are partially correct or are to be considered as entirely without
foundation, is however, unhappily, not at the present time a mere matter
of speculation. We have recently and again been called upon to witness
the ravages of small-pox amongst us: we have watched its progress at
the bed-side, case after case, and have seen the sufferers fall a prey to
all its loathsome horrors.

The debt of gratitude which mankind owes to Jenner is indeed beyond
all estimation, and his name must ever have been enrolled among the
noblest of the benefactors of the human race, even had the protection
introduced by the practice of vaccination ceased with the existence of
him who called it into being. We must not, however, permit ourselves to
be dazzled or led astray by our respect for any individual, however ex-
alted; but, guided by his bright example, let us rather seek, with the
same unwearied perseverance and the same unabated energy, the object
which he sought with so much simplicity of mind and singleness of pur-
pose. It is not by shrinking from investigation that we shall ever arrive
at the knowledge of truth; and we owe it alike to the memory of Jenner,
to ourselves, and to those who look to us for advice and direction, to
ascertain how far vaccination is entitled to our confidence as a protective
from the ravages of small-pox; how far the failures which recent experi-
ence demonstrates to have become more frequent are to be attributed to
imperfection in the agent itself or in the mode in which it is applied;
to modifications which time may have wrought in its very essence, or to
carelessness, ignorance, or neglect in its employment.

That complete protection has been afforded to multitudes is undeniable; that comparative protection is afforded to a very large majority of those subjected to the vaccine influence is equally clear; but that numerous partial failures have occurred, and some (we must with pain admit) in which the operation has been absolutely of no avail, cannot now be disputed. This, however, only affords the stronger grounds for calm and close enquiry into the causes of failure; and the benefit unquestionably derived in by far the greater proportion of instances should only make us more desirous, more anxiously solicitous, to extend the same benefit to all. Influenced by these considerations, we cannot but feel that a careful, candid, and unbiassed investigation is required into many points which have either never been sufficiently cleared up, or are, from some cause or other, again involved in uncertainty; and this not only for the sake of truth, but for the minor, though no less pressing object of satisfying the public mind. Among these points that of RE-VACCINATION is one of the most important, involving as it does the consideration of the influence of time in weakening the protective powers of the primary vaccination. We gladly avail ourselves, therefore, of the valuable materials afforded us by the treatises of Dr. Heim, in the larger and more recent of which many other questions also, of almost equal importance, are brought under notice.

The smaller of these works is simply what its title states, an account of the results of the revaccinations in the King of Wirtemberg's military force, during the years 1833, 1834, and 1835. The larger and more comprehensive treatise embraces the whole subject, and is divided into eight sections, whereof the first four are devoted to a condensed abstract of the cases of small-pox, whether confluent, distinct, or modified, occurring in each of the four circles or provinces into which the kingdom of Wirtemberg is partitioned. These circles, or departments, are those of the Neckar, the Schwarzwald or Black Forest, the Jagst, and the Danube; and are again subdivided into what are termed Superior Bailiwicks, to each of which a medical officer is appointed. It is from the official reports furnished by the medical officers of these districts that the materials of Dr. Heim's work are chiefly derived.

The fifth section gives a nosographical retrospect, first, of the true small-pox in its various stages, with the irregularities to which these are liable; its sequelæ; the diversities of character in the accompanying fever; the variations in the appearance of the eruption; its complications with the varioloid disease and with cow-pox, &c.: and, secondly, of the varioloid disease, considered, in like manner, in the several stages of its progress; the variations in the character and form of the eruption, and in the nature of the accompanying fever; its progress in persons who have neither been vaccinated nor had previous small-pox; its complications with scarlet fever and measles, with true small-pox, and with cow-pox, &c. The sixth section is occupied with an account of the geographical diffusion of the small-pox contagion, and concludes the first part of the work. The second part, to which we propose chiefly to direct our attention, comprehends the seventh and eighth sections, respectively devoted to an account of the vaccinations and revaccinations in the five years from July 1831, to June 1836, inclusive.

Dr. Heim, following the official reports from which his materials are

derived, considers, first, the number of the vaccinated (geimpften*), with or without success, within the period specified; secondly, the number of children, three years old and upwards, not yet vaccinated according to the regulations; thirdly, the number of authorized vaccinators; fourthly, the appearance of the pock among the cows; fifthly, the observations made upon the development of the protecting pocks, and upon the effects of their complication with other diseases; sixthly, the abuses observed in the public vaccinations, and in the mode of keeping the vaccination-books; seventhly, proposals for a more simple and less costly method of conducting the vaccinations.

1. There would seem to have been considerable difficulty in ascertaining the number of the vaccinated, with or without success, from the official reports, partly in consequence of deficient information in some of these reports, partly from the imperfect manner of keeping the vaccination-books. To obviate these defects, Dr. Heim has recourse to calculations, founded chiefly upon an examination of the rates of mortality in the first years of life, observing the numbers recorded among the deaths as having been vaccinated, and taking into account also the number of those who were attacked with small-pox previous to vaccination. These calculations, with some others connected therewith, are derived from such of the reports (forty-five out of sixty-four) as afford the necessary particulars, and are reduced to a tabular form, of which the general results are, that, in Wirtemberg, of 100 dying within the first year of life, 9·38 have been vaccinated; of 100 living born, 35·93 die within the year, and 52·36 reach their fourteenth year; of 100 deaths, 42·76 are children in the first year of life; and of 100 births, 3·98 are stillborn. The proportion of the births to the population is as 1 to 23·12, and that of the births to the deaths 1·23 to 1. From some of these data Dr. Heim draws the inference that the greatest possible extension had been given to the vaccine process although we cannot here follow him through all the steps of his calculation. What is of far more importance to our present object is the startling fact that, notwithstanding this greatest possible extension of the protecting influence of vaccination, the rate of infant mortality, as deduced from the five years to which the observations refer, is actually higher in Wirtemberg than in any other country, Holland excepted. Süssmilch asserts that, in populous cities, of 100 deaths, 30 are usually in the first year of life, and that the mean number is 26; the general average deduced from the extensive enquiries of Professor Rau,† is 24 per cent.; whereas, in Wirtemberg, of 100 deaths, 42·76 were in the first year. Dr. Heim, after calling attention to the fact that 36 out of every hundred born die before the termination of the year, makes no attempt at an explanation, but observes, that it would be an object of the highest interest to ascertain by comparison how far the remaining acute contagious exanthemata, and their sequelæ, may have taken the place of the small-pox in the work of devastation; a suggestion already made, under similar circumstances,

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* The word strictly means the *inoculated*, whether with small-pox, cow-pox, or other matter, but is used throughout in the more limited sense of *vaccinated*, in which sense we shall also occasionally employ it; although we shall, for the most part, adhere to the more common practice, now arbitrarily but very generally adopted, of designating the giving of cow-pox *vaccination*, and of small-pox *inoculation*.

† Ueber die unnatürliche Sterblichkeit der Kinder. Bern, 1836.

by Dr. Watt, of Glasgow, though, as Dr. Baron asserts, upon insufficient and erroneous grounds.

Another point requiring notice, alluded to under this head, is that, among 208,322 children vaccinated within the five years, no less than seventy deaths occurred during the progress of the vaccine process; a proportion which is, notwithstanding, below that of Baden, where, of 98,198 children vaccinated in the four years from 1817 to 1820 inclusive, 79 died; so that, of 306,520 vaccinations, 149 proved fatal in some part of their course. This gives a proportion of one in 2057: small, it is true, in itself, but, when taken in the aggregate through an extensive population, giving rise to an actual mortality by no means to be disregarded. A portion of this mortality, however, as Dr. Heim clearly shows, must be considered as arising from accidental complications, occurring during the progress of the vaccine vesicle; and he takes considerable pains to prove that the rate of mortality is not greater than what is usually observed among children in the earliest age of life, during a like period to that over which the vaccine process extends. The cases which are more intimately connected with the vaccination he attributes to the puncture, considered either as a simple or poisoned wound, the danger of which is necessarily greater at an age when the process of dentition, the active nutrition and growth of many other organs and systems, and the excitability of the vascular and nervous systems, must exercise so much influence. This apparently fanciful notion of our author must be kept in view by our readers. We shall find it influencing many of his theoretical views of the nature and efficiency of vaccine protection, and leading to one most important practical suggestion.

2. The number of unprotected children, exceeding the age of three years, acknowledged by the official document, at the close of the government year 1835-36, was 271, chiefly contumacious, or belonging to families having no settled residence.

3. The number of gentlemen practising vaccination in Wirtemberg, in 1836, was 905, of whom 104 were physicians and 801 surgeons. To each individual vaccinator there fell, on the average, during the five years, 231 vaccinations, giving forty-six as the annual average number. On the first introduction of the practice of vaccination, it was thought, in Wirtemberg as elsewhere, that the operation, in whatever way performed, afforded an absolute protection against the destructive ravages of small-pox; whilst, at the same time, from its esteemed simplicity, the performance of it was intrusted not only to physicians, but also to midwives, bath-keepers, schoolmasters, and ministers of religion. In many instances even the fathers of families, setting aside the claims of experience and skill, conceived themselves competent to vaccinate their own children. These irregular proceedings on the part of ignorant and unprofessional persons were, however, soon put a stop to, and, by an explicit regulation, the practice of vaccine inoculation was committed to the *physicians,* in whose hands it remains, in many states, to this day; but in others, and amongst these Wirtemberg, has been, for the most part, transmitted to the surgeons.

With these state regulations we have in this country little concern, as, to all appearance, it will be long ere the legislature will deem the health and lives of the community fitting objects for their attention and care.

That the indiscriminate vaccination which has been practised in this country by ignorant or unqualified persons, with little or no regard to the condition of the subject, to the selection of the vaccine lymph, or to the progress and character of the vesicles formed, is to be regarded as one of the main causes of the frequent failure of the vaccine process, we are fully convinced; but, with the indisposition at present manifested by the government to intromit with all questions of medical police, we do not see how adequate protection can be afforded to the public. It is of little avail that persons eminently qualified for this and other services are at command, if ignorant assumption is permitted, on the one hand, to impose on those who are unable to judge for themselves; while, on the other, a miserable system of unjust economy is upheld by authority, by which real efficiency is sacrificed to any consideration involving a calculation of pounds, shillings, and pence.

4. The rarity of the vaccine disease amongst the cows, not only in this country but in France, and in many other parts of the continent, is well known to our readers. They will scarcely be prepared, therefore, for the statement made by Dr. Heim of its frequency in Wirtemberg. In the five years over which his report extends, no less than 274 cows affected with the disease, or at least with pustular or vesicular eruptions resembling it, were submitted to the inspection of the official authorities. Of this number, 188 were considered to have the true pustule, the others being rejected as spurious; and lymph was taken, for the purposes of inoculation, from forty of those pronounced to have the genuine disease. The distribution of this number of cows affected with the disease in the several departments is as follows:

	Genuine.	Spurious.	Employed successfully in the inoculation.
Neckarkreis	56	21	18
Schwarzwaldkreis	72	41	8
Jagstkreis	33	12	6
Donaukreis	27	12	8
	188	86	40

It is worthy of remark, as the author observes, that in the Donaukreis, or circle of the Danube, an agricultural district, in which not only is the stock of cattle the largest, but also other circumstances favorable to the progress of the cow-pox are found to occur, the number of the affected cows was the smallest; and that, on the contrary, in the vineyard country of the Neckar, the number was so considerable.

The remark made by Reckleben, Thär, and others, that only cows affording fresh milk could become affected with the genuine pock, is not borne out by the observation of Dr. Heim; but the most important part of this subsection is the description given of the varieties of the spurious disease. Apart from the symptomatic pocky eruptions associated with the *Milzbrand* (malignant pustule) and other epidemic or infectious diseases, there are no less than eight peculiar forms of cow-pox (the spurious cow-pocks of Jenner) described by Dr. Heim, of which five are communicable to man. The three varieties which do not produce any appreciable effects upon the human system are—1, Viborg's wart-pock: this arises spontaneously in the alpine districts, and consists of red pustules, which contain a yellow humour (Feuchtigkeit), and run into wart-like indurations, often

of long continuance. 2. The whitish tetter-like eruption of Thär, of the size of a pea, and surrounded with a small areola, the papulæ gradually succeeding each other, and developing a spurious cow-pock, which transforms itself into a deep-red ulcer with a blackish crust. 3. The white bladders known by the name of wind-pock, which contain a viscid fluid, crack easily, and form ulcers. The five varieties which are communicable to man, and readily give rise to local symptoms, are—1. The amber-pock of Nissen, with yellowish, almost transparent pustules, of the size of a kidney-bean, which exhale a cadaverous odour, readily burst, and run into corroding ulcers: the animals become feverish, refuse their food, and infect the hand which touches them with ill-conditioned ulcers. 2. Attended with milder symptoms than the preceding, but yet generating deep corroding ulcers in man, is the black-pock of Nissen, which is of a blackish appearance, and surrounded with a small red areola. 3. The blueish pocks (Var. *cærulea*, Niss.) occur most abundantly, are of the size of a pea, and surrounded by a small margin, and are accompanied with only a moderate degree of fever: they produce, however, only a small pustule upon the milker. 4. The white pock (Var. *alba*), with large vesicles filled with a yellowish ichor, induces swelling and inflammation of the hands of the milkers, with secondary ulcers. 5. The red pocks (Var. *rubra*) are of the size of a pea, and appear as red, hard knots, which pass into vesicles: these vesicles spontaneously burst, become indurated, or produce kindly ulcers, readily giving rise to local symptoms in man.

It is obvious that the occurrence of these and other modifications of eruptive disease analogous to the true vaccine, materially complicates the question of vaccine inoculation, at the same time that it demands for the safe and successful practice of the primary inoculation from the cow, a degree of experience which few, if any, have hitherto had the opportunity of acquiring in this country. At this time, too, more especially, when a spirit of enquiry is evidently at work, and when the genuine disease amongst the cows is stated to have recently made its appearance,* it becomes of the first importance that those who are anxious to introduce fresh sources of lymph should be fully aware of the difficulties which may in this way obstruct their path, and render their endeavours, to say the least, fruitless, if not positively injurious. But not only have they the spurious forms of cow-pox to contend with, but numerous modifications and anomalies in the genuine disease as it exists in the cow, affecting its transmission from the cow to the human subject. Some of these appear in the Wirtemberg reports.

A child was inoculated from a cow, from which not only four other cows in the same stall had been infected with the disease, but also an attendant had received the infection,—a pustule being produced in the middle finger of the right hand. For five days the punctures remained dry, and on the eighth day the child was vaccinated from the arm of another. Now *all* the punctures took, and as many as eight pustules were formed. A cow, on the 6th of December, was hot and had little appetite; soon after, small pustules with red areolæ formed upon the udder, but which on the 15th of December (the ninth day) had already become

* See page 591 of our last Volume.

encrusted, and no more clear lymph could be found, except in one which appeared to have arisen subsequently. This pustule was of a pale blue or lead colour, with an inflamed margin; it was seated on one of the nipples, but was smaller than the pock in children, not pointed, but round and flat, and contained a perfectly transparent and clear lymph, and no puriform matter. On the 16th of December, a child, seven months old, was inoculated from this abortive pock, and six perfect pustules formed upon the arms.

5. The observations upon the development of the cow-pox, and its complication with other diseases, are of great interest and importance, and require a more extended consideration than has been given to the preceding points of this investigation. Dr. Heim first notices under this head the reinoculation of those who have already been vaccinated without effect. The total number of children belonging to this class, according to Table ix., amounted to 2098 out of 208,322, or about one per cent. Of this number, the first Revaccination (or second vaccination) was unsuccessful in 68; the second Revaccination (third vaccination), in 77; the third Revaccination (fourth vaccination), in 4; and the fourth Revaccination (fifth vaccination), in 1; the intervals between the vaccinations being usually twelve months, though frequently not more than a few weeks. Taking into consideration every impediment to the reception of the infection, whether arising from the lymph itself, the time of year, or other cause, Dr. Heim thinks that not only the great number of primary failures, but, yet more, the repeated want of effect of the Vaccine, under the most varying external circumstances, would seem to show that in the first year of life an immunity from the cow-pox contagion may not unfrequently exist; that the susceptibility for the same may be first formed in the infantile organism, in which so many processes of development are at work, during or after the first period of dentition; and that it arises not always at once, but slowly and by degrees. Hence, he infers, comes the varioloid disease in children not yet vaccinated, or the appearance of a modified, or of only one genuine vesicle at the first vaccination of children, in whom, after a short time, a second vaccination, acting upon a portion of the susceptibility which had been kept back, may succeed, or again produce a modified effect: and hence the possibility that even regularly vaccinated children may, after a short interval, become affected with small-pox. The Vaccine has accomplished for them what it could; but it either acted upon a small proportional quantity of the already too abundant susceptibility to small-pox infection (vorräthige Pockenanlage), and was not in the condition to extinguish the whole amount; or it was applied during the formation of this susceptibility (Anlage), exhausted that already collected, but could not prevent the after-development of the unextinguished remnant. This is mere hypothesis: but this alternative affords an explanation, Dr. H. thinks, of all the irregularities hitherto belonging to the progress of cow-pox, and establishes the practical rule *that a small number of punctures, and the too-early vaccination of children, cannot be considered proper in all cases.*

From the foregoing observations it will be seen that the formation of a single vaccine vesicle, more especially in the first year of life, is not considered by Dr. Heim to afford sufficient protection; and several instances are related of the successful revaccination of those in whom one

vesicle only had come to perfection.   A child who, two years before, had
been vaccinated, with the effect of producing only one, but a perfectly
formed pock, was revaccinated by Dr. Klett upon these grounds.   Two
pustules, very perfect both in shape and progress, were generated, but were
accompanied with only slight feverishness.   Another child had been vac-
cinated with dry matter, with the formation of one vesicle only : reinocu-
lation of the child from this same pustule furnished, in seven days more,
two regular protecting pocks. A third child, in the district of Schorndorf,
vaccinated from dry matter, had only one good vesicle, from which two
punctures were practised upon the other arm.   On the seventh day, two
perfect pustules came to maturity.   The following fact is curious, though
not strictly of the same nature as the preceding.   Dr. Uhl, in the early
part of the year 1836, vaccinated fourteen children with matter from a
child who had been brought out in rainy weather, and had been chilled
in consequence.   In four of these children the cow-pox regularly took
effect, with the exception that the vesicles were somewhat too small, and
the surrounding areolæ not of their true red colour. In the other ten only
modified vesicles made their appearance, for the most part of the size of a
pin's head, without either central depression or red areola.   From these
imperfect vesicles Dr. Uhl revaccinated the ten children, each with its
own matter, upon the originally inoculated places; the pocks themselves
being so small as scarcely to afford the requisite quantity of lymph for
the inoculation; and a perfectly regular cow-pox vesicle appeared upon
each.   Altogether thirty-two individuals, each with one good vaccine
pustule, underwent reinoculation; of whom the third part seemed to be
not protected.

The subject of modified cow-pox,—that is, of cow-pox in which the
insertion of vaccine matter is, from some cause or other, attended with
only partial effects, the vesicles not proceeding in their due course, and
never attaining to full perfection,—is one upon which much valuable
information is given, affording support, as Dr. Heim thinks, to the views
already alluded to respecting the progressive development of the vaccine
and variolous susceptibility.   A child, a year and a half old, was vacci-
nated, the first time with dry matter, the second time from arm to arm,
but upon each occasion with imperfect success; finally, a third trial de-
veloped a good cow-pock, but the surrounding areola was not perfected
until the twelfth day.   Reasoning upon this and other analogous cases,
Dr. Heim infers that the capability of receiving the pock is, in not a few
cases, developed at a period *subsequent to the birth of the child;* and
that vaccination, performed in the first months, and even first years of
life, is often of little avail.   The susceptibility, he conceives, when first
awakened, gives rise to a modified form; and, as it becomes stronger,
one or more regular and fully formed vesicles may be developed.
Dr. Hartmann, at the vaccination of the year 1835, vaccinated a child a
year and a half old : seven pocks were developed, of which five were ge-
nuine and two modified in their progress.   In a child, thirteen months
old, of six pustules, five were genuine and one imperfect.   Again, in a
child of one year, three perfect and two imperfect vesicles were formed.
Other cases are reported, and adduced by Dr. Heim as favouring his
views.   We are, however, desirous, upon the present occasion, of laying
facts before our readers rather than of discussing opinions; and must

therefore be content with giving the following short extract as the conclusion at which the author arrives:*

" The experience of our inoculators affords favorable, and indeed unequivocal, testimony in support of my view, that the course of modified cow-pox bears the same relation to the true vaccine that the varioloid exanthem does to variola; and that it only expresses the approaching (annähernde) receptivity for the variolous or vaccine virus (contagium); that, in fact, in the modified result of inoculation, nothing can be more incorrect than to place the varioloid exanthem in opposition to variola. As the latter (varioloid disease) is nothing but variola mitigated by reason of a diminished disposition to the reception of variolous disease, so the former (modified cow-pox) is merely the vaccine modified or mitigated by reason of a lessened or not sufficiently developed disposition for the reception of cow-pox; and they both possess only a temporary protective power, in proportion as they absorb the store of corresponding constitutional disposition." (p. 506.)

The following instance of the modified progress of the cow-pox is important, as showing the influence exercised upon the vaccine by peculiar states of the constitution. In a child who was affected with inflammatory symptoms of the chest, the vesicle was irregular in its progress, and on the eighth day rapidly dried up: when restored to health, the child was reinoculated, and with the best effect.

The usual practice of the inoculators is, it is stated, to place no reliance upon a modified success; very many of the reports making no distinction between complete and partial failures, and recognizing only the appearance of genuine vesicles as evidence of the protecting influence being in any degree exercised.

Passing over some instances of modified cow-pox induced by the vaccination of those who had previously suffered from small-pox and chicken-pox (Wasserpocken), we proceed to notice the retardation which is occasionally observed to take place in the progress of the cow-pox. This retardation of the regular progress of the cow-pox was not usually followed by any deviation from the normal appearance of the pustule; neither did the quantity of the vaccine matter employed seem to be concerned in producing it, since it was observed to occur as well when the inoculation was performed from arm to arm, as when it was effected through the medium of dried lymph; and indeed no less when the original cow-pox lymph itself was employed. Among the external circumstances which are reputed to exert an influence, the cold weather of the early spring is especially pointed out. In the district of Welzheim, in the Jagstkreis, in all the children inoculated in the cold month of March, the vesicles were two days later in making their appearance. Dr. Heim, however, is not disposed to attach much weight to cold as a cause of delay, since the retardation was not observed to occur more in winter than at other seasons, and he considers that delay of advance is rather to be ascribed to the individual force of reaction in the children, than to any external circumstance. Not a few of these retarded cases he states to have occurred when the number of pocks was not more than one or two. For the most part, the retardation of the cow-pox process was only for one or two days, but cases were observed in which it reached

* In translating this passage, we have paid more regard to the general sense than to verbal arrangement. There is here either a great want of elegance, or rather perspicuity of style, on the part of the author, or else, which is highly probable, (see note at the end of the book,) some omission or mistake on the part of the printer.—Rev.

from four and five to eight, and even to eleven and twelve days.   Two children were vaccinated with dried lymph: on the eighth day there was as yet no trace of a vesicle; one of the children was again vaccinated with fresh matter, eight punctures being made; and fourteen days after the first inoculation there were as many as thirteen pustules, eight from the second, and five from the first inoculation.   The vaccination was not re-peated on the other child, but after fourteen days one pustule was formed, which, on the sixteenth day, presented the appearance usually observed on the eighth day.   This child was afterwards revaccinated, on account of there being only a single pustule, but without effect.   A child, on the eighth day after inoculation, had merely an obscure trace of the operation; in eight more days, two perfect pustules were to be seen. Many other examples are reported, some of which, as well as some of those above mentioned, we cannot but think, are opposed rather than favorable to the views of a progressively developed susceptibility advo-cated by Dr. Heim.

Occasionally, though not so frequently as the retardation of the pro-cess, the vaccine was observed to be accelerated in its progress.   The influence of weather and season is, for the most part, alleged also as the cause of this anomaly.   In several of the inoculated, in the district of Gerabronn, the vaccine was already fully formed on the third or fourth day; the pustules being filled with clear lymph, and regularly encrusted by the following day.   This deviation was ascribed to the continued heat, from the effects of which the children, though not ill, were observed to be weak and to look pale.   In the districts of Schorndorf, Nürtingen, and Heilbronn, the cow-pox was accelerated by one day; the warm weather being assigned as the cause.   It should be stated, however, that the reports are not uniform in this respect, and that some instances are brought forward both of the acceleration of the vaccine in cold weather and of its retardation in summer.   Dr. Becher, of Stutgard, considers the lymph to be less active in the heat of summer than in the colder seasons of the year.

The influence of atmospheric temperature on the development of the vaccine pustules, is a subject of great practical importance.   The effect of cold in retarding, and of heat in accelerating, their progress must, we think, be admitted to a certain extent.   Some striking illustrations of the fact were published some years ago by Dr. Howison, in the London Med. Gazette, (vol. 8.) They occurred in his practice in Edinburgh. But neither what is seen in this country or in Germany can give any adequate idea of the extent of influence which atmospheric distemperature really exerts.   We must, for this purpose, learn from Griva and others the effects of vaccinating in Italy during the presence of a sirocco; in Egypt, while the hot winds blow from the desert; we must note the difficulty which is experienced in perpetuating a pure stock of lymph at Sierra Leone; we must learn from the truly *National* Vaccine Establishment of St. Petersburgh their comparative success in winter and summer; we must mark the increasing difficulties of the vaccinists in Hindostan, as displayed in the Transactions of the Medical and Physical Society of Calcutta.   To enter at large on this branch of the enquiry is not our business or design; but we suggest it to those who have the opportunities

as one which may usefully occupy their thoughts and engage their attention.

A question of very great moment in the practice of cow-pox inoculation is the age at which it should be had recourse to. The natural desire felt by the advocates of the operation, that its protective influence should be afforded at an early period of life, may possibly, in many instances, have led to a premature introduction of the vaccine virus. That this is Dr. Heim's opinion will be readily anticipated from what has gone before; and we are bound to admit that several of the reported cases would seem to give a degree of countenance to it. In children from three to four and even six months old, the pustules are stated to have been not only not so perfect as in those vaccinated at a later period, but the marks left by them are stated to become less distinct, and even to fade entirely away. While it is recommended, however, that no child should be vaccinated *within the first twelvemonth*, it is especially urged that none should be allowed to remain unvaccinated who have attained the age of three years. We have no reason to believe that this suggestion of our author has ever been acted on, nor can we easily be persuaded that there exist any good grounds for its adoption. Four months was the age at which variolous inoculation was most successfully practised, and we are convinced that the same period is equally fitted for the due development of the vaccine.

Considerable objection seems to be entertained on the part of some of the parents to permitting vaccine matter to be taken from the vesicles formed on the arms of their children. They affirm that it puts the children to considerable pain, and that it brings injurious consequences; and from the practice which appears to have been occasionally followed, of completely exhausting the pustules, it would seem that sometimes they have very sufficient grounds for their repugnance. Dr. Heim states that cases are known to him in which, after a copious abstraction of matter, an enormous erysipelatous swelling of the upper extremities, accompanied with irritative fever, attacked the children; and that in one of these cases, that of a child a year and a quarter old, death from convulsions ensued three weeks after this proceeding. Similar cases, he adds, have been frequently observed, and suggests that a restriction should be placed upon the arbitrary breaking up (Unterwühlens) of the pustules. One at least should be preserved intact, and the others should never be so rifled of their contents as to give rise to unnecessary suffering, or to the slightest risk of inducing inflammatory reaction.

We are perfectly in accordance with our author on this part of the surgery of vaccination. The local irritation which such a thorough exhaustion of the vesicles presupposes, is much to be deprecated. While we readily acknowledge this, we cannot, at the same time, omit to state, in justice to the practice of the late Dr. Walker, that his views were altogether different; that he never acknowledged this doctrine; and that his vaccinations have stood the test of *time* (the best of all tests) fully as well as those of Jenner.

Great stress is laid by the Wirtemberg physicians on the *number* of punctures, as it is conceived by many that, unless some evident constitutional effect is produced, little reliance is to be placed upon the protective

powers of the mere local affection.   Hence, as we have already had occasion to show, when only a single vesicle comes to perfection, it is a very general practice to revaccinate.   The number of incisions, however, varies considerably in different places: some of the inoculators contenting themselves with from two to four upon each arm, while others endeavour to produce as many as fifteen, twenty, and even thirty pustules. This extreme pustulation, however, excites very severe constitutional disturbance, and produces a morbid state of no trifling import.   Since the year 1831, it has been the practice of the inoculating physicians in the district of Ulm, to increase the number of pustules; and they have observed that, when a considerable number of pocks are developed, a primary fever appears as early as from the third to the fifth day, which, with a smaller number of vaccine pustules, is scarcely, if at all, perceptible: whence, says Dr. Heim, it may be concluded, with Dr. Gramm, that the increase in the number of pustules renders the vaccine disease more severe, and that the susceptibility to the small-pox contagion is, in consequence, thrown off for a longer time.   Dr. Camerer endeavoured to increase the number of pustules to at least sixteen, and for the most part with success; he observed also a stronger primary fever to accompany the increase. This practice seems to have been pushed to its greatest extent by Dr. Wanner, of Oehringen, who for many years had been in the habit of making an increased number of punctures, under the idea that it was the most certain means of affording protection from subsequent attacks of small-pox.   Of 505 children inoculated by him during the government year 1834-35, three fourths had as many as from fifteen to twenty, and some even upwards of thirty pustules each, and with the best success; to which also the goodness of the cow-pox matter probably contributed its share.   From this increase in the number of the pustules, the cow-pox fever was much more severe, and the parents complained that, since this method had been adopted, the fretfulness and restlessness of the children were much greater than before; that the heat was very great in the night; and that such feverish excitement became apparent between the third and fourth days, an occurrence which they had never remarked in the earlier inoculations, when the pustules were fewer in number.

The number of punctures, however, would seem to have been about three on each arm in the general practice of the inoculators, and from these from four to five pustules were developed, on the average.   The opinions expressed by Dr. Heim himself on this practice of greatly increasing the number of punctures are judicious, and highly deserving of the attentive consideration of its advocates.   " I have," he says, " pointed out that twelve punctures are sufficient for revaccination, and an equal number also may be thought sufficient for the vaccination of the young.   Though many inoculators may have recourse to a greater number of punctures in children, without local or general detriment, and have advised the general adoption of this practice, several facts have, nevertheless, been recorded, from which it would seem that too many punctures have been followed by severe local inflammation and gangrene, dangerous irritative fever, convulsions, and (according to Vogel, Lyner, and others,) even death itself.   It is probable, therefore, that the number of from twelve to twenty punctures, required by Eichhorn and Gregory,

may mark the minimum and maximum, and that the doubling the usual number of incisions, as amongst us, is more than sufficient." (p. 519.)

We have thus given, at some length, the opinions of our German brethren on two great questions connected with vaccine pathology,—the increase of protective power by increase of vesicles, and the necessity of developing fever so as to ensure the full measure of protection. The latter doctrine has never been generally adopted in this country, but it has received the able support of Staff-surgeon Murray, in some papers published by him in the London Medical Gazette. His experience was obtained at the Cape of Good Hope. With regard to the first, it appears to us that, provided the lymph employed be of an energetic quality, two, or at furthest three, insertions are amply sufficient for the security of the individual; though more may be useful with reference to the convenience of public supply. The numerous punctures alluded to as having been formerly made by Dr. Gregory, at the Small-pox Hospital, (amounting often to twenty or thirty,) were adopted at a time when the virus was very weak and of small intensity. The practice has been wholly discontinued since the more energetic virus now employed came first into use. A certain degree of sympathetic fever (though not, as we conceive, essential to vaccine protection,) is yet desirable, as giving undisputed evidence of constitutional affection. We know not what is the nature of the salutary change actually effected in the system by the insertion of the vaccine; but it is more reasonable to think that a high degree of fever should disturb, rather than that it should promote that desirable modification of temperament.

In accordance with the preceding opinion as to the importance of a certain degree of constitutional action being induced, is the ascription of superior efficacy, by some of the Wirtemberg vaccinators, to lymph procured direct from the cow. It is certain that, in cases of inoculation with primary vaccine lymph, there is a much more severe local affection and a greater reaction manifested than where the lymph has repeatedly passed through the human subject; an observation which has been made not only by the foreign authorities, but also by many in this country. Some of these reports also describe the pustules from primary lymph as being finer and of a peculiarly genuine appearance, and attended with swelling of the axillary glands, and in a few cases with severe secondary fever, vomiting, and convulsions. There would seem, however, to be more difficulty in inducing the disease by the insertion of original lymph than by vaccination with that which has already been assimilated, as it were, to the human constitution; a considerable proportion (perhaps three fourths) of the inoculations made with the lymph direct from the cow altogether failing in effect.

Some curious results are given of the simultaneous insertion of lymph direct from the cow on the one arm, and of lymph from the human subject on the other arm, by the District-surgeon Fehleisen, in the year 1832. The experiment was repeated in the spring of the year 1836, in a similar manner, and with analogous effects, by M. Bousquet, at the instance of the French Academy. For the details of the original experiment we must refer to Dr. Heim's work: the results obtained by M. Bousquet, which are the more important as having been witnessed by several of the faculty of Paris, are as follows: About fourteen days after the breaking

out of the genuine pock on the udder of a cow at Passy, near Paris,
M. Bousquet inoculated several children, some with this lymph alone,
others (for the sake of comparison) with the new lymph on one arm and
with the ordinary vaccine on the other.   The woman who milked the
cow, and who had vaccine pustules on the fingers and on the lips, toge-
ther with three of these children who were ailing, weakly, and miserable,
were shown to the Academy and the members of the Vaccine Commis-
sion, on the 30th of March.   Pustules, but equally perfect on both
arms, had formed upon all the punctures.   Several children were inocu-
lated from these, on the left arm with the new cow-pox matter, on the
right with the old lymph.   On the 5th of April, three of these children
were inspected at the Academy, by a great number of physicians; and upon
this occasion with a different result.   A pustule had formed upon each
puncture: those from the new cow-pox were more perfectly developed,
larger, flatter, clearer, and contained a more limpid and more abundant
fluid ; while those from the old lymph were smaller, more elevated, of a
paler and yellowish colour, and contained a deeper-coloured, clammy
fluid.   Considerable difference of opinion as to the cause of this diversity
seems to have arisen ; some of the members of the Academy concluding
that the original lymph had degenerated, and that its protective powers
had become either weaker or modified : others were not disposed to attach
much importance to differences occurring in the size and elevation of
the pustules, their development being influenced by manifold circum-
stances; such as the varying states of the atmosphere, idiosyncrasy, the
period at which the lymph is taken, &c.   The two series of experiments
with the new lymph also, as M. Bousquet himself allowed, afforded dif-
ferent results;   the children who were inoculated with both kinds of
lymph showing finer and larger pustules from the new than from the old,
while the children who were inoculated with the new lymph only pre-
sented pustules altogether of the usual appearance.

" The experience of all ages," observes Dr. Heim, in conclusion, " teaches that
contagion, in its progress from body to body, becomes, after a time, milder and less
fatal; as in the plague, the yellow fever, syphilis, leprosy, &c.; and certainly, not-
withstanding the opposite views entertained by the English and French physicians, the
vaccine also cannot be altogether excluded from this analogy ; while, on the other hand,
the Germans again may have been in error, by setting forth the deterioration of the
unrenewed matter in too forcible a point of view.   Be this however as it may, this
much is very certain, that the eventual operations of both kinds of matter is the same:
the lymph taken immediately from the cow, even in the inoculations performed under
the eye of Jenner himself, could not prevent the renewed susceptibility for the small-
pox contagion, and protected neither longer, nor indeed more nor less, than the assi-
milated (humanisirten) cow-pox.   A like fate will probably in time attend all later
inoculations from the cow, if care be not taken to give renewed protection by revac-
cination.   The places most abundant in original lymph, Switzerland and Holstein,
exceed other countries in the frequency and extent of small-pox and varioloid epide-
mics.   It will, therefore, be always advisable that too much value and reliance be
not placed upon the renewal of the vaccine matter; and while this, when opportunity
occurs, should not be neglected, yet, in regard to the measures relative to the pro-
tection against the return of the small-pox, it may be left wholly out of account."
(p. 524.)

The length to which this analysis has already extended, and the im-
portant matter which still remains before us, preclude us from entering
into this and other questions of the highest interest alluded to in the

course of the preceding observations; but it must not be allowed to pass entirely without notice, that the foregoing conclusions of the author are scarcely consistent with the views which he has elsewhere advocated, or with the facts repeatedly brought forward.   The most striking defect, as it appears to us, in recent vaccinations, more especially in those practised in this country, has been a too great reliance upon the character of the local affection *alone*, without any regard being had to the production of an effect upon the general system.   This opinion, setting aside the speculative notions as to the exhaustion of variolous or vaccine sensibility, and the subsequent renewal of the same, agrees in the main with the views of Dr. Heim and many of the Wirtemberg physicians.   Now if, as would seem to be the fact, more severe constitutional symptoms are developed in connexion with the vaccine as induced by lymph directly from the cow, we can scarcely subscribe to the opinion that, in regard to the protective measures against the return of small-pox, primary or direct vaccination can be left wholly out of account.   On the contrary, if an equal degree of constitutional affection can be induced by from two to four or six primary vesicles as by from twelve to twenty or more punctures with assimilated lymph, an evident advantage would be gained in the diminution of the amount of suffering and of the purely local inflammatory symptoms, to which, after all, much, if not the whole, of the constitutional disturbance in these over-scarified cases may be owing.

The effects of the complication of the vaccine with other diseases are entered into at considerable length, and are well worthy of attentive study.   Brief notices of the more important instances are given for each year of the period to which the observations extend, and afterwards a general summary of the results, classed under the respective heads of the complications with heterogeneous fevers, with acute exanthemata, and with chronic eruptions.   We regret to be compelled to pass over this part of Dr. Heim's work in a very cursory manner.   Two or three points, however, to which considerable importance at one period or another has been attached, call for remark.   One of these points, important on account of its universal occurrence, is dentition.   Dr. Heim thinks that this process is not usually delayed by the vaccine disease: on the contrary, in many cases it was observed to be accelerated by the fever attending the development of the cow-pox, and he states that within the five years no less than six children died during the course of the vaccine, from the more energetic progress of the dentition.   The vaccine process itself does not appear to have been interfered with by the simultaneous development of the teeth.

We confess we are rather surprised at this statement; for we have always been of opinion that dentition was one of the things that most materially interfered with the process of vaccination.   The pathological principle involved in this consideration we believe to be this, and it is very important and of wide application:—Extraneous fever, however excited, prevents the growth and checks the normal progress of the vesicle. If the variolous germ be received into the system quietly, it may advance, *pari passu*, with vaccination, and neither interfere with nor modify the effects of the other.   But the moment fever is excited, that moment the vaccine vesicle begins to droop.   So with regard to dentition: if it go

on calmly, the vaccination is not influenced; if fever be awakened, the vesicles suffer.

Among the exanthematous eruptions, passing over the complications with measles, scarlet fever, erysipelas, &c. (the first of which especially would seem to be rendered milder by concurrence with the vaccine,) those which are of a pustular or vesicular character require a brief notice. Varicella (water-pox, stone-pox, wind-pox,) is said to be often epidemic at the period of the public vaccinations, and is consequently frequently observed with the vaccine; sometimes exerting no influence upon its progress, sometimes either accelerating or delaying the formation of the vesicles. Children scarcely recovered from varicella were vaccinated with good effect; and, again, in other cases, the water-pox (the purely vesicular disease, or chicken-pox of Dr. Alison?) followed the vaccine, and both appeared to tread the one upon the other, entirely without correlation, unless perhaps a power of awakening the chicken-pox should be conceded to the insertion of vaccine matter. An argument is subsequently attempted to be founded upon this circumstance, against the identity of the water-pox and the variolous contagions; but, for a fuller examination of this matter, we must refer our readers to Dr. Thomson's "Account of the Varioloid Epidemic in Edinburgh," (with which work, by the way, Dr. Heim seems to be but imperfectly acquainted;) to Mr. Cross's "Sketch of the Varioloid Epidemic of Norwich," and the other works which profess to unravel that long-disputed question.

A peculiar secondary eruption, by many named the cow-pox eruption, is described as having been observed to accompany the vaccine process: it appeared under different forms, sometimes only partial, but occasionally spreading over the whole surface of the body, passing through various gradations, from a spotted measles-like rash to the papuliform, vesicular, or truly pustular character. It did not retard the vaccine process, nor disturb the general health, with the exception of occasionally giving rise to a marked increase of the fever. It usually occurred between the eighth and fourteenth days, and lasted for two or three days. In the greater number of cases, the form was that of the miliary kind, showing small, reddish, cuticular elevations, which soon gave place to a bran-like desquamation. That which appeared after the fourteenth day of the inoculation assumed the character of what Gölis terms the cow-pox itch, which consists of isolated vesicles often filled with a puriform fluid. These vesicles, after bursting, become covered with scurfs, or leave behind superficial ulcers, some of which often take a long time to heal. In a few cases the eruption assumed the appearance of chicken-pox, and in six cases a few vesicles, partially resembling the cow-pox (modified) or entirely similar to it, showed themselves in different parts of the body from the seventh to the ninth day after the inoculation. This description of the several forms of constitutional vaccine eruption appears to us to be elaborately and carefully drawn up, and it affords a favorable specimen of the talent for patient research which characterizes our German brethren.

Fifty-four cases of the complication of the vaccine with variola were observed; 28 of which occurred in those vaccinated for the first time, and 26 in revaccinated individuals. Of the first 28, or primary vaccinations, 24 were children (for the most part under the age of twelve

months), 17 had variola vera (of whom 7 died), and 7 varioloid disease (of whom 1 died.) Of the second 26, or revaccinations, 3 only were variola vera (of which 1 died), and 23 were the varioloid disease (of which not one proved fatal.)

It is worthy of especial notice that from a child belonging to the first section, three quarters of a year old, who was seized with small-pox on the fourth day after the vaccination had come to maturity, several other persons were revaccinated, in seven of whom the vaccine succeeded, but without a trace of variolous contamination.

Of the chronic eruptive diseases, it is observed, that but seldom was the regular progress of the vaccine either limited or hastened by their presence, and yet more rarely was any modification of the cow-pox produced; neither as a general principle was there any retarding influence exercised upon the vaccine pustulation.   The effect of the vaccine upon the chronic eruptive diseases seems however to have been beneficial, rendering them milder in most instances, and very often exercising a healing effect, so that in not a small number of cases the fall of the cow-pox crusts was accompanied with the healing of the long-standing and nearly-habitual skin disease.   The itch, with which many children belonging to different districts were affected when vaccinated, for the most part did not retard the vaccine process.   Herpes (Flechten), under which only a few children laboured when vaccinated, usually produced no alteration in the vaccine pustule; in one child affected with herpes, there appeared two modified pocks.

The conclusions at which Dr. Heim arrives upon the subject of complications are, that "from the united observations of the five years it appears to be established that inflammations, inflammatory fevers, dentition, influenza, &c. assist and hasten the progress of the vaccine; that, on the contrary, nervous fevers, epistaxis, and other hemorrhages, diarrhœa, dysentery, and cholera may weaken and retard the process; but that acute and chronic eruptions usually exercise no essentially modifying influence, while these last affections are themselves rendered milder in their course by the presence of the vaccine disease." (p. 555.)

To those who have read and studied the later writings of Jenner, these observations of Dr. Heim will necessarily appear very startling.   Jenner taught that in preoccupation of the skin by any disease capable of affording *a humour*, whether thick or thin, serous, purulent, or glutinous, was to be found the *grand impediment* to efficient vaccination.   It would lead us too far from our present object to enter into the merits of this theory, but it is clear from what has been just stated that our continental brethren join issue with Dr. Jenner on this point. And here we must express our unqualified disapprobation of the practice of inserting the vaccine virus for the purpose of affording a protection against small-pox, when any such disease exists on the surface of the body, or may be presumed to be lurking in the system.   Indeed, on the contrary, we hold it to be an indisputable axiom, that unless circumstances imperatively call for immediate vaccination, the state of health of the recipient should be as perfect as possible; and we are inclined to attribute very many of the failures in protective power observed in this country and elsewhere, and some part of the mortality during the vaccine process occurring in the practice of our continental brethren, to a neglect of the requisite precautions on this head.

The remaining subdivisions of this section need not detain us, and we pass on therefore to the eighth section, which professes to give an account of the REVACCINATIONS in the kingdom of Wirtemberg during the stated years, 1831 to 1836 inclusive.

Dr. Heim, having given a hasty sketch of the progress of the vaccine theory, from the first announcement of the cow-pox as affording a perfect immunity against small-pox, (in which, however, as it appears to us, he scarcely does justice to Jenner, and indeed would rather seem either to have not sufficiently comprehended his views or to have misunderstood their general import,) proceeds to trace the gradual alteration in this respect which has, for the most part, taken place in the opinions of many even of the warmest supporters of the practice of vaccination.   From this brief history, it appears that as early as the year 1829, the Wirtemberg government had recognized the principle of revaccination in cases presumed to be inadequately protected by the primary inoculation, at the same time that the appearance of the marks left by the first vaccination, was considered to afford the required evidence as to the fact of the constitution being effectively protected or otherwise.   Cases, however, occurring in which, notwithstanding that the inoculative marks presented the required characters, small-pox, either in its genuine form, or modified, presented itself, it was subsequently recommended by the Royal Medical College, that in infected houses and their neighbourhood the revaccination should be had recourse to indiscriminately, without respect to the appearance of the cicatrix or to the age of the individual, a measure which was, for the most part, wherever practicable, adopted, and which was also carried into effect among the military.

Investigation into the subject of the vaccine cicatrix, considered as affording evidence of the protected or unprotected state of the constitution, has led the Wirtemberg physicians to conclude that little or no reliance is to be placed upon the sign in question.   It was ascertained that the pustules of genuine cow-pox (analogous in this respect to small-pox) may leave an imperfect mark, or even no mark at all; and, on the other hand, that to depend upon the regular appearance of the mark as a sign of protection, was only to adopt a dangerous error and to lull the public into a state of false and injurious security.   The circumstances attending the epidemic prevalence of small-pox, as well as the effects of the revaccination, prove that the cicatrix theory is untenable.   Of 1055 cases of small-pox in which the marks were visible, 914 had good, and only 141 imperfect marks; 147 of these, notwithstanding that the vaccine marks were normal, were cases of genuine small-pox.   Neither did the characters of the marks afford any criterion for the success of the revaccination process.   In the district of Böblingen, of 2718 individuals of different ages who were revaccinated, 1322, or nearly one half, had regular cicatrices from the primary vaccination; yet of these last, in 65 per cent., the revaccination completely succeeded; in 26 per cent., the process was modified; and in 9 per cent. only did it fail altogether; 1134 of the whole number showed imperfect marks, and yet the revaccination failed in 18 per cent. of these, while it was modified in 28 per cent., and perfectly succeeded with the remainder.   The results among the military, which are the more striking on account of the absolute reliance to be placed upon them, were, that of 14,384 revaccinations, 7845, or more than

half, showed normal marks of the preceding vaccination, and yet of this number the success of the revaccination was complete in 31 per cent., modified in 29 per cent., and failed altogether in 40 per cent. In 46 per cent. of those with imperfect marks, the revaccination was notwithstanding without effect, while in 26 per cent. the success of the operation was modified, and in 28 per cent. complete.

It has already been observed that the genuine vaccine vesicle may occasionally leave no permanent trace of its existence, and accordingly it was noticed that persons presenting no mark of previous vaccination were not always to be considered as unprotected. The number of these cases is stated to be too great for it to be supposed that they had been previously affected with small-pox which had left no trace behind it, or for the circumstance to be attributed to idiosyncrasy, or to want of susceptibility for the vaccine. Of 127 cases of this description, (in which there was no trace of a cicatrix,) submitted to vaccination in the district of Böblingen, the result was successful in seventy-five, modified in forty, and in twelve the operation was without effect. Of the 14,384 revaccinated soldiers, 2030, nearly the seventh part, had no mark of previous inoculation, and of these 2030 individuals the vaccine succeeded in 34 per cent., was modified in 19 per cent., and altogether without effect in 47 per cent., or nearly one half of the number. A similar analysis, illustrated by a table, is given of a certain portion of the military in whom the number of the marks was ascertained, and with similar results; so that if we are to place any dependence upon the correctness of the statements given, and upon the care and skill of the inspecting physicians, the inference seems unavoidable, that the appearance of the cicatrix affords no indication whatever as to the effect of the previous vaccination in limiting the success of a second vaccination; and that it is of little value as indicating the amount of protection afforded against subsequent attacks of small-pox seems likewise clear, although this latter conclusion rests upon evidence, neither of the same amount, nor of the same character as the former. It should be observed, that a continued or renewed susceptibility for the vaccine, is by no means proved to be commensurate with, or correlative to, a continued or renewed susceptibility for small-pox; neither has it hitherto been established, at least to our satisfaction, notwithstanding the high regard we entertain for the opinions of many of those who maintain this view, that small-pox and the vaccine are so essentially and circumstantially identical, as to admit of this convenient method of reasoning in parallels. Without absolutely denying that it may be so, we should rather wait the result of further evidence before subscribing to the correctness of the opinion; and, in accordance with the wise practice of the Scottish Jury Courts, record, for the present at least, a verdict of *not proven*.

That considerable difficulty should occur in the endeavour to promote the practice of revaccination throughout the general mass of the population, will not be a matter of surprise. Various motives originating in supineness and indolence on the one hand, or in dislike and opposition on the other, unless the danger is imminent at the door, will always operate against every measure of utility which is not manifestly accompanied with present benefit. It is, therefore, no more than what might have been reasonably anticipated that, for the most part, with the exception

of districts in which the variolous and varioloid forms of disease were pre-
valent and fatal, the progress in the revaccination of the civil part of the
population has been partial. Yet, upon the whole, the result of the
revaccinations in Wirtemberg during the five years has been in the highest
degree successful. Of somewhat more than 44,000 who have undergone
the operation, upwards of 20,000 were revaccinated with good effect,
about 9000 with modified success, and the remaining 15,000 without
effect. The following are the comparative results in the several depart-
ments, and amongst the military. Of each hundred revaccinations, there
were

	Good.	Modified.	Unsuccessful.
In the Neckarkreis . . .	57	23	20
In the Schwarzwaldkreis . .	29	26	45
In the Jagstkreis	70	5	25
In the Donaukreis	27	35	38
Throughout the Departments	51	18	31
Among the Military . . .	34	25	41
Of the total Revaccinated	46	20	34

The difference observed in the four departments, in respect to each
other and to the military, is thought to depend chiefly upon the different
ages at which the revaccinations take place; thus, in the departments of
the Danube and the Schwarzwald, in which the revaccinated were for the
most part children, the proportion of cases in which the operation suc-
ceeded was smaller; in the army, where almost all those undergoing the
operation are nearly of the same age, (twenty-one years,) there was a
medium proportion of successful results; whilst in the Jagstkreis, where
the persons who were revaccinated were generally more advanced in life,
for example of the age of thirty years, the proportionate success was
greater. It is scarcely necessary to observe that, according to the views
of Dr. Heim, the more complete the success of the revaccination the
greater had been the receptivity, not only of the vaccine but also of
the variolous contagion, and the more completely had that susceptibility
been, by the second operation, removed.

It has been already stated that the marks of the previous vaccination,
although performed with complete success, were at the revaccination
often found to be very imperfect, sometimes presenting nothing more
than a scarcely visible clearer-coloured spot on the skin, and that even,
in a few cases, not a trace could be detected of the success of the opera-
tion; yet the cicatrices left after complete success of the revaccination,
appeared for the most part indented and strongly marked, although per-
haps much smaller (not much exceeding the size of a pea,) than those left
by the operation in childhood. Traces upon the skin were also usually
observed from the modified success of the revaccination, though yet more
imperfect than where the success was good, merely pale spots about the
size of a lentil being visible, without sharpness of edge or depressed
points. In the spring of the year 1836, fifteen recruits marked with spots
of this description presented themselves at the reinoculation, stating that
these marks were the remains of a former *revaccination*, in which the suc-
cess had not been complete. In two of these, in whom the revaccination
had been performed two years before, the progress in the year 1836 was

again modified; of four who had been revaccinated three years previously, the success of the renewed operation was good in two and modified in two; in three who had been revaccinated five years before, the third vaccination succeeded in two and was modified in one; in one after seven years the renewed operation succeeded, and in all the remaining cases, of which two had been revaccinated eight years and two nine years previously, the progress of the third vaccination was modified. On the other hand, thirty-two individuals showed cicatrices, varying in number from one to six, which were of a better form, more clearly marked, and punctuated, although only of the size of a pea; from which it was inferred that the revaccination performed at their own homes had been attended with good success. Two of these had been revaccinated two months; six, one year; four, two years; seven, three years; and two, four years, previously: in not one of these did the renewed inoculation in the year 1836 succeed. In one who had been revaccinated five years before, the revaccination of 1836 had modified success; in another, as well as in one who had been revaccinated six years previously, the renewed operation was without effect; and in two after seven, two after eight, and four after nine years, the reinoculation was unsuccessful.

With respect to the duration of the protective power of revaccination, Dr. Heim thinks that the age usually selected for the performance of this second operation has left behind either the whole, or at least a large part of the morbid processes of the age of childhood; that the whole constitution has now acquired a greater degree of firmness, and is less liable to be affected by external circumstances than the mobile organism of infantile life; and, consequently, that there is no tangible reason why the revaccination should not extend its protection for at least an equal period of time with the primary vaccination, but under the following indispensable conditions: " 1, that the success of the revaccination be complete, and in no respect less perfect than the good cow-pox of children; and 2, that the vaccine virus be in sufficient quantity to saturate (aufgedrungen) the system." For the fulfilment of this last condition, the average number of twelve punctures is thought sufficient, as has been before remarked, and for reasons which are stated more fully in the account of the revaccination of the military.

The following are the results of the revaccination observed in 152 individuals of different ages, in sixty-one of whom the operation succeeded, but in ninety was of no avail. 1. In the greater number the virus produced no effect, the abraded cutis healing in a few days. 2. In some the epidermis was raised in a few days into a small vesicle, which, however, sank again as rapidly and dried up without exciting any reaction, leaving no trace of its previous existence. 3. In others, the inoculation seemed to take effect, the pustules rose, became pitted, and filled with a transparent fluid, but quickly dried up as early as the seventh or eighth day, when usually the surrounding redness spreads, and the crusts fell off without leaving the characteristic marks; the constitutional reaction in these cases, with the exception of local symptoms in the axilla and down the arms, was unimportant. 4. Only in those individuals in whom the vaccine went through its regular progress, was any reaction affecting the general health observed.

In many corpulent persons, Dr. Bardili observed on the sixth or seventh

day after the revaccination, transparent pustules, surrounded with a dusky blueish redness, in which the characteristic marks of the genuine protective pock were absent; in this form swelling of the arm and of the axillary glands, and marked fever always prevailed. These pustules commonly burst on the seventh or eighth day, leaving a painful, easily bleeding ulcer, a line in depth and varying in size, which in the course of from fourteen to twenty days became covered with a dry adherent crust. Other varieties were also observed which we cannot here particularize. Another report mentions that, in corpulent, strong men of dusky complexion, the inflammation ran high and the pocks were very full, becoming purulent as early as the eighth day. The inflammation of the skin was so extensive, that the individuals were unable to continue at their work, and were obliged to remain in bed. The same circumstances were also observed in the district of Oehringen; the fever was so severe that the patients were obliged to lie in bed; and the greater the interval between the first and second inoculations, the more perfect were the pocks, and the more severe the fever. It seems to have been very generally observed, that the shorter the interval between the two vaccinations, the less was the amount of the success which attended the second insertion of the lymph; while usually, and only with very few exceptions, was the revaccination entirely without effect when performed from five to six years after the first inoculation. It succeeded also, according to Dr. Rösler, in adults more certainly with lymph taken from adults, while with lymph taken from children it was frequently of no avail.

We have no great confidence in the correctness of this last observation, for it has been disproved again and again under our own inspection, until we have been tired of renewing the experiment; but the former alleged fact, touching the better development of the secondary vaccine vesicle in proportion to the distance of time that has elapsed from the first insertion of the virus, is, we believe, quite correct *in the main*, though liable, of course, to many modifications and exceptions. This has always appeared to us a fact of great importance, tending to establish the doctrine of a gradual impairment of vaccine protection.

Various degrees of modification in the revaccination process were observed in different places. In the district of Böblingen occurred several cases of this description:—1. The pocks formed sooner, or their progress was earlier completed, than in the genuine affection. 2. Although they put on the same form they did not attain the same size as the genuine pocks, which was particularly evident in the incrustation. 3. They filled after their appearance with a thin lymph, which remained as clear as water and limpid to the seventh or eighth day. 4. The areola was paler than in the genuine pocks and seldom round, and attained its greatest limit towards the eighth or ninth day, after which it usually disappeared rapidly. 5. The deeply seated induration accompanying this inflammatory circle was always less than in the true pock. 6. From the third to the seventh or eighth day the modified cow-pox was always accompanied with painful sensations in the axillary glands, attended by marked shiverings and occasional headach. In the district of Waiblingen the progress of the vaccinoid affection was observed to be quicker than the genuine cow-pox; usually there was itching in the wound a few hours after the revaccination, which about the third day became almost unbearable.

The pock was commonly fully formed about the fifth day, and contained
a yellowish, viscid lymph; the pustules had scarcely perceptible cells,
and not always the central depression; and the characteristic surround-
ing redness was wanting. On other occasions, the entire upper arm
became highly inflamed, or red indurated streaks were observed; the
axillary glands were painfully swollen; the period of suppuration was
sooner completed; the crusts were deep seated, had no central pit, and
were easily and earlier detached; and, lastly, the cicatrices were more
superficial, not shining, and often uneven.

We have now to examine the effects of the vaccination upon those who
had already suffered from small-pox. Of 297 persons marked with the
small-pox who willingly submitted themselves to this operation, at the
revaccination of those who had previously had cow-pox, the vaccine
took effect regularly in ninety-five, was modified in seventy-six, and failed
altogether in 126, giving a proportion of thirty-two in the hundred of the
genuine form, twenty-six of the modified, and forty-two in the hundred
of failures. A remarkable correspondence exists between these numbers
and those afforded by the revaccination of the military, which however
Dr. Heim fails to notice. The proportion of one hundred cases of each
description is as follows:

	With Success.	Modified.	Without Effect.
Vaccinated after Small-pox	32	26	42
Revaccinated Soldiers	34	25	41

Are we to assume, therefore, upon the principles advocated by
Dr. Heim and the Wirtemberg physicians, with respect to the vaccinated,
that of every hundred individuals who have gone through the natural
small-pox, and that too in so severe a degree as to leave marks behind,
no less than fifty-eight again become after a time liable to the disease?
The author gives some statements, as to what has been hitherto observed
in different countries with respect to this point, which are worthy of com-
parison with the preceding. La Condamine estimates the proportion of
the secondary attacks of small-pox to the primary ones as 1 in 50,000;
Heberden as 1 in 10,000; other English physicians as 1 in 8000;
Eichorn again states the proportion as high as 1 in 250; and in the
Copenhagen epidemic, according to Möhl, one of every six attacked with
small-pox had before gone through the disease. This, however, by no
means proves that one-sixth of those who had formerly had small-pox
were a second time attacked; whereas upon the assumption, that those
who are capable of being vaccinated with effect, either after small-pox or
after the vaccine, are unprotected, more than one half would seem to
become after a time susceptible, and nearly one third liable to the disease
in its most genuine form. That we have not here forced an inference
from the facts to which the author would not himself subscribe, is evident
from his concluding remark. " Most certainly," says he, " might these
individuals, vaccinated after small-pox, ninety-five with good, and seventy-
six with modified success, have been attacked under an epidemic influ-
ence for the second time with one or other form of that disease."

Among the subjects subsequently examined in this section, is the value
of revaccination matter, (that is, of matter which has been taken from
genuine cow-pox pustules developed in a previously vaccinated indivi-
dual,) for the purposes of further inoculation. Several objections have

been urged against the employment of matter of this description; among others the doubt as to its genuineness, and the danger of conveying other poisons into the constitution with the vaccine virus taken from adults, for instance, those of syphilis, gonorrhœa, itch, &c. This last, as it appears to us, is an objection of no mean weight, but we cannot here enter into the subject further than to give a caution against the employment of the lymph derived from adults, and from those of weakly or diseased constitution generally. Dr. Heim, however, entertains no such fears, and states it as his opinion, that the vaccine virus is scarcely susceptible of mingling with others of similar nature. He says that inoculations have been practised with vaccine lymph from children known to be affected with itch, tinea capitis, and chicken-pox, or even when the vaccine has been complicated with genuine small-pox, (of which, indeed, an instance has been already alluded to,) without either of these diseases being transmitted to the inoculated individual, or the progress of the cow-pox itself interfered with. We must, however, state that the earlier vaccinations which took place in this country at the Small-pox Hospital of London, are decidedly opposed to this statement of Dr. Heim, and we trust that the vaccinations in this country will never be contaminated with any such, to say the least, doubtful practices.

That a considerable number of those who have been vaccinated in early infancy have subsequently become the subjects of small-pox, either in its genuine or modified form, cannot, after recent experience, be doubted; and that the reinoculation with vaccine lymph produces, in a large proportion of cases, effects local and constitutional, and a cow-pox eruption either genuine or variously modified, seems to be established by the researches of Dr. Heim; but still the *cui bono?*—the question as to the benefit derived from this revaccination arises; and it remains yet to be shown that revaccinated individuals are less susceptible of small-pox, than those who have passed only once through that operation. Further enquiries too must be made before we can agree with Heim, that the renewed susceptibility of small-pox in adult life is owing to a portion of such susceptibility being left unextinguished by the primary vaccination, however perfectly that may have succeeded, and being perhaps beyond the reach of the protective powers of the agent itself. This question perhaps, as yet, can scarcely be satisfactorily solved; although we admit that, as far as the limited experience which we have hitherto had upon the subject extends, the revaccinated are placed in the more favorable position. Of the 44,000 revaccinations within the five years over which these investigations extend, it is stated that one individual only belonging to the military class had been subsequently attacked with small-pox, and in this case the reinoculation two years before was modified, and the small-pox assumed the varioloid instead of the genuine form. This, however, though satisfactory as far as it goes, is yet imperfect, for various reasons; the houses of the infected are in Wirtemberg placed under certain restrictive or quarantine regulations, and the system of strict seclusion under which the military are kept where contagious or infectious disorders are prevalent, would render the full exposure of any of this class of persons a matter of very unfrequent occurrence. The real test, therefore, of the efficacy of revaccination must be sought amongst the civil part of the population; but of this we have no very definite details;

and, indeed, the period which has elapsed since the introduction of the practice is scarcely sufficient to have afforded satisfactory results. The total number of cases of small-pox occurring within the five years is stated to have been 1677, of which 634 were genuine and 1043 varioloid; the number of inhabitants is stated at 363,298; so that 1 in 217 is the proportion of those attacked. But if this be reduced to an annual average, we shall find that the proportion is 1 in 1085; the number of the revaccinated, deducting the military, is about 30,000, and the failure of thirty of these (1 in 1000), considering that the process has not been of very early or of very easy accomplishment, would, we are inclined to think, show a not much greater amount of protection to be afforded by the second vaccination than by the primary vaccination. That there have been failures of protection to this amount among the revaccinations, or, in other words, that as many cases of small-pox have occurred in the revaccinated part of the population, we do not mean to assert; the number may have been more or fewer; but that several failures of this kind have occurred may be gathered from the reports, although it would not be a very easy matter to ascertain their precise number. The subject, however, deserves the most careful and unbiassed investigation, such as, we trust, will ere long be carried on in this country on the most extensive scale. The committee appointed at the last Anniversary of the Provincial Medical Association, for the purpose of enquiring into the present state of this country with reference to the diffusion of variola, and the protective power of vaccination, if duly seconded by the members in general, have much in their power; and we trust that they will do their utmost to execute, diligently and faithfully, the honorable and most important duty assigned to them.

There is much more in these works of Dr. Heim that we would gladly have laid before our readers. His volumes abound with matter that is of the highest interest in every point of view, whether as regards our science, or the welfare of suffering humanity; but we are compelled to pause for the present; contenting ourselves with having thus brought before the English public, for the first time, the results of much extended observation on the practice of vaccination; and concluding with the expression of our warmest approbation of the manner in which Dr. Heim has executed the very laborious and important task, to which his time and talents have been so usefully devoted.

ART. XI.

A Treatise on the Nature and Treatment of the Hooping-cough, and its Complications, illustrated by Cases: with an Appendix, containing Hints on the Management of Children. By G. H. ROE, M.D. Oxon, Physician to the Westminster Hospital.—*London*, 1838. 8vo. pp. 258.

THE variety of plans of treatment and of remedies, avowed and secret, for hooping-cough, evinces either that this disease runs its course uncontrolled by art, or that its pathology is still unsettled. We believe the latter to be the case, and are therefore the more disposed to pay attention to the present work, though possessing no claims to originality,

because it furnishes us with an opportunity of calling the notice of our readers to the present position of the question, and of showing that a field of investigation is still open to other pathologists.

The prevalent opinions respecting the essential nature of hooping-cough admit of division into two great classes,—according to one of which it is a neurosis, according to the other an inflammation: the former class rest on the phenomena observed during life, the latter on the organic changes discovered after death. It is obvious that those who regard this affection as nervous will generally be found to precede, in point of time, those who maintain the inflammatory doctrine; the disposition to scrutinize our organs for the causes of disease being of late years much increased. Of the advocates of the former opinion one of the most celebrated is Hufeland, who, in 1793, influenced probably by the convulsive nature of the symptoms, attributed hooping-cough to an irritation of the eighth pair and the phrenic nerves: he maintained that, when this irritation was extreme, it extended to the cardia, and vomiting ensues, which removes the irritation from the pulmonary nerves, and the paroxysm ceases. It was never understood that these opinions of Hufeland underwent any modification from the diffusion of cadaveric researches or other circumstances; and, had they been modified, the public, from the learned professor's constant connexion with the medical press of Germany, would certainly have been acquainted with the change. It must be manifest that a doctrine sanctioned by such high authority would obtain an influence quite independent of its intrinsic reasonableness; and it will not be matter of surprise that Jahn, Löbenstein-Loebel, and the majority of German practitioners, advocated the nervous theory of the disease. A similar theory prevailed in this country from the days of Cullen till a comparatively recent period, when pathological anatomy came to be generally considered as the means by which the intricacies of the disease were to be unravelled.

But, besides the light derived from this source, there were circumstances attending the disease, which, not receiving an explanation from a nervous pathology, led many persons to consider it as partaking of the nature of inflammation. The symptoms of catarrh, an inflammatory disease, precede for some time the characteristic cough; and, both during this period and afterwards, in the interval of the fits of convulsive coughing, the mucous wheeze, and occasionally the other rhonchi which distinguish pulmonary catarrh, are perceptible. Hence there was an impression, either that such catarrh or the secretion it occasioned gave rise to the convulsive cough; and the latter of these views was considerably confirmed by the relief afforded by the expulsion of mucus during the spontaneous vomiting common in the disease, or that artificially produced. The main ground, however, for the substitution of an inflammatory for a nervous doctrine were the visible marks of an inflammatory condition displayed on cadaveric inspection; and to Dr. Watt, of Glasgow, is due the credit of having been the first in this country to draw the attention of the profession to such marks in the air-passages and lungs in this disease.

The circumstance of ordinary bronchitis and pneumonia being unaccompanied by the peculiar cough of pertussis, constitutes an obvious objection to the doctrine which would identify it with these affections;

and some writers, struck with the discrepancy, and moreover impressed by the manifest cerebral affection existing in a proportion of cases, have placed the site of the inflammation, irritation, or congestion, supposed to characterize the disease, in the brain. This opinion was supported by Dr. Webster in our own country, and by M. Alphonse Leroy in France; and, in 1827, M. Desruelles advocated the same doctrine, with considerable force of argument, in his "Traité de la Coqueluche." "So long," says he, "as the bronchitis is simple, the cough presents no peculiarity; but when the diaphragm, the muscles of respiration, those of the glottis, of the larynx, the posterior membrane of the bronchi, the air-cells of the lungs, and even, according to Laennec, those of the *velum palati,* come into action, and are simultaneously affected with spasm, under the influence of the *cerebral irritation,* the cough changes its character, and becomes convulsive; and every time that an afflux of blood takes place to the brain the cough returns, and appears in paroxysms. This intermittent congestion precedes the kink of coughing, and disappears along with it, to reappear shortly, and to bring on a fresh paroxysm."*

After giving a candid exposition and examination of these various doctrines, Dr. Roe states his own opinion in the following terms:

"All we know is, that a spasmodic affection of the muscles in question, and a slight inflammation of the air-passages, are the first effects produced by the cause of hooping-cough, when that disease exists without complication; and that the violence with which the blood is driven throughout the body frequently causes inflammation of some other parts, and by degrees brings on that fearful train of consequences which we have seen to be so often the result of the long continuance of the cough." (p. 67.)

Dr. Roe is struck with the coincidence between his opinion and that expressed by M. Blache, in the Archives générales de Médecine for 1833, who considers hooping-cough as a nervous affection very frequently complicated with bronchitis or pneumonia, but which may exist without them. There is this striking difference between them, that the opinion of Dr. Roe involves the hypothesis that all inflammatory affections existing in this disease, slight bronchitis excepted, are produced by the violence with which the blood is propelled through the body by the cough; whilst M. Blache more prudently confines himself to expressing the fact of the coincidence of the nervous affection and inflammation. It is not only not proved, but it is in the highest degree improbable, that the more intense degrees of bronchitis, and the pneumonia still more frequently attending the disease, are produced by the cough; though we think that the cough and the affection of respiration during the paroxysms, furnish a reasonable explanation of the cerebral affection when such occurs, and one, too, supported by some analogies; such, for instance, as that of influenza when it attacks infants.

After his very lengthened disquisition on the cause and seat of the disease, Dr. Roe passes to the consideration of the more practical part of his work. He first considers simple hooping-cough, and then its complications with bronchitis, pneumonia, hydrocephalus, and remittent fever; all these divisions displaying but too clearly that dearth of original observation and reasoning which characterizes the volume. One of

* Traité, p. 77.

his patients, labouring under what was considered simple hooping-cough, dies somewhat unexpectedly,—we think it probable from interlobular pneumonia. Permission is granted to examine the body, but, from regard to the feelings of parents, Dr. Roe declines doing it. Now, we think a kind of humanity much superior to that so indulged would have suggested an examination. It is likewise to be regretted that, amid such poverty of original observation, the smallest particle should have been omitted. We would ask why pleuritis is omitted from the list of complications? It is one which has more than once fallen under our own observation in dissection, and has tended to confirm the view we have long entertained, that there is in this disease an inherent (not an accidental) tendency to inflammation of the thoracic viscera.

The author's opinions on the treatment of the disease are developed principally in the eighth chapter, or that on Simple Hooping-cough. His favorite remedy is hydrocyanic acid; the adoption of which he owes to a work on this medicine, published by Dr. Granville a good many years ago. Dr. Roe combines it with ipecacuanha or tartarized antimony, but ascribes to the acid alone the power of curing the disease. He informs us that, two or three days after the employment of these medicines, the violence of the paroxysms is perceptibly diminished, and their duration is shortened; and at the end of five or six days the whoop ceases. This section of the work shows Dr. Roe to be a judicious physician; and, had it been published in some journal, would have done him credit. His error has consisted in swelling the materials of an *article* into a volume of nearly three hundred pages, by gleanings from works with which the public was already well acquainted. The evidence adduced of the utility of the medicine is very decisive, and the rules for its employment are generally judicious. Perhaps the following statement must be regarded as an exception to this claim to praise; the more so, as it appears from some passages in the book that non-medical persons have given the medicine to their children on the authority of Dr. Roe:

"The dose should be repeated when the effects begin to subside, which, in mild cases, generally happens in three or four hours; but, when much fever is present, its influence is felt but a very short time: under such circumstances a larger quantity may be given, and at shorter intervals, without any apprehension of danger, *so long as the fever lasts. In some very severe cases,* when the pulse was up to 120, with a good deal of fever and a very hot skin, I have given to *a girl of ten years of age* a minim and a half of this medicine every quarter of an hour, for twelve hours: at the end of twenty-four hours she was free from fever, and her strength was not in the least reduced by the effects of the remedy." (p. 90.)

We have witnessed much of the tolerance of powerful medicines by persons in a state of febrile excitement; but we were not aware that it had ever been attempted, under any circumstances, to give a child of ten years of age seventy-two minims of hydrocyanic acid in twelve hours. We hope that a skilful and vigilant medical man sits by to superintend the administration of these powerful doses, and that no clerical or matronly reader of Dr. Roe's work will imitate them.

We feel ourselves compelled to pass over the ninth, tenth, and eleventh chapters, which treat of the complication of hooping-cough with bronchitis, pneumonia, and hydrocephalus, with the comment that "all is barren" of interesting and instructive matter. The twelfth chapter, treating of "general rules for the management of hooping-cough," dis-

plays that common-place judiciousness which constitutes the useful physician, but not a writer of books and instructor of his fellows.   The same dull mediocrity pervades the concluding fifty pages of the volume, which are dedicated to hints on the general management of children.   In the work of a member of our most learned university one naturally looks for graces of style to adorn what is accurate, and relieve what is faulty in reasoning; but here, too, we regret to say that we are doomed to disappointment.   The composition is certainly far from elegant, and is not always even accurate.

Art. XII.

1. *Elements of Physiology ; being an Account of the Laws and Principles of the Animal Economy, especially in reference to the Constitution of Man.* By THOMAS J. AITKIN, M.D. F.R.C.S.E. &c. &c.— *London*, 1838.   12mo. pp. 514.

2. *Popular Physiology; being a familar Explanation of the most interesting Facts connected with the Structure and Functions of Animals, and particularly of Man.* By PERCEVAL B. LORD, M.B. M.R.C.S.—*London*, 1834.   12mo. pp. 500.

3. *Outlines of Human Physiology ; designed for the use of the higher Classes in common Schools.* By GEORGE HAYWARD, M.D., Professor of Surgery in Harvard University.   *Second Edition.*—*Boston* (*New England*), 1838.   12mo. pp. 222.

THESE three little volumes are all written with the very excellent object of giving to the young a general view of a science, which might have been expected to be the one most universally taught wherever education is afforded.   The number of works which have lately issued from the press, designed to enforce those practical rules for the management of the body to which the study of physiology would of itself lead the intelligent mind, is a sufficient indication of the progress of enlightenment on this point.   But we would have physiology and natural history studied by the young as a means of intellectual discipline; and we cannot account for the neglect with which the knowledge of the works of nature has been treated, whilst the learning of man has been exalted so highly. " Whilst we teach our children many tongues," we have heard it well remarked, " and enable them to understand many books, shall we leave them in ignorance of the great Book of Nature, which, to use the impressive language of Lord Bacon, ' is written in the only language that hath gone forth to all the ends of the earth, unaffected by the confusion of Babel.' "   We perfectly accord, then, with the following sentiments expressed by Dr. Aitkin in his preface :

" In tracing the many curious contrivances which are exhibited in the organization of the human body, in perceiving the admirable adaptation of its parts to the performance of their various offices, and in viewing the whole series of its organs in their mutual relation and subserviency, one exercises the highest faculties of his mind, and acquires information that may be useful in life.   Indeed, so obvious is the importance of an acquaintance with the bodily frame, that one, viewing the subject in a ge-

neral sense, might naturally wonder why anatomy and physiology are not considered as indispensable elements of education."

We have been not a little surprised to meet, in a recent essay on Education, which professed to give the most enlightened view of the subject, with a passage implying that physiology, from its very nature, was totally unfit to be made a branch of instruction to the young. Now we cannot see why this should be; for, granting that there are certain parts of it which must be either omitted altogether or treated in a peculiar manner, there is nothing else, we conceive, that need prevent the teacher from entering as deeply into the science as he deems proper: and, on these subjects which are usually *tabooed* most sacredly, much information may, we are sure, be communicated, without the slightest invasion of even female delicacy, by a proper selection of topics. The great point *here* is to illustrate processes which every child knows to take place, without referring to those which, it is universally agreed, should be kept in the back-ground. What possible evil, we will ask, can result from tracing the development of the chick during incubation, and from showing the curious correspondence between the different stages of the evolution of its organs, and the permanent forms of the same in the lower animals? or in demonstrating the interesting process of fertilization in plants? or in explaining the process of reproduction in sponges and polypes? But, it may be objected, *any* allusion to subjects of this kind with the young will cause their thoughts to dwell upon what are at all times matters of sufficient curiosity. To this we would answer, that we would communicate such knowledge, and familiarize the mind to regard it as *not* of a mysterious character, *before* the time when the thoughts naturally tend to dwell upon it; and we cannot but regard the early inculcation of a taste for natural science as the best preservative against the injurious tendency of many works to which the young, either secretly or by permission, obtain access. To the female mind, in particular, the undisguised exhibition, in glowing colours, of the passion of love and its effects seems to us much more baneful than the scientific explanation of many physiological processes, which may be made both highly interesting and free from the remotest allusion to things which it is desirable not to name. For this purpose we prefer the use of purely scientific terms, without their popular explanations; and should rather, for example, speak of stamens and pistils, in describing the structure and actions of a flower, than of male and female organs. We know an instance in which a lecturer, who fully illustrated this department of vegetable physiology to an audience principally consisting of ladies, was afterwards thanked, by clergymen who had been his hearers, for having shown the possibility of combining a complete exposition of it with the most perfect purity of thought and language. That Dr. Lord's volume appears in the series of works published by the Christian Knowledge Society is a sufficient indication of the sentiments of that body upon the utility of the study of physiology as a branch of general education.

We have said more on this subject than it may be thought by some to require; but we believe that the errors to which we have alluded are shared nearly as much by our professional brethren as by the public at large. We must now say a few words of the respective characters of the volumes on which we have founded them.

We think that Dr. Aitkin could scarcely have been aware of the existence of the second work on our list when he undertook the first. They are so much alike in plan and in general style of execution, that it would be difficult to decide upon the superiority of either, each having its peculiar merits. Dr. Aitkin's volume strikes us as having a few redundancies, more fitted for the professional than the general reader: the latter, we think, will not be much benefited by the account of the doctor's sufferings from a wound received in dissection, which occupies two pages and a half, nor by various anatomical minutiæ of no immediate practical application. The history of the development of the human fœtus might also have been either omitted or modified with advantage, as in its present form it has no scientific value, and to the general reader can be of no real benefit. The author has not been able to free himself from a degree of technicality which will, we fear, embarrass and alarm many of his readers; and in this respect we think Dr. Lord's work decidedly superior, although it is deficient in many topics which Dr. Aitkin has treated well and fully. Both these treatises, however, are too full to serve as mere class-books, and are better adapted for the private reader. The third book on our list is one which appears to be well received in America with the former object; and is, from its more limited scope, better adapted to it. This, however, is somewhat too meager; and altogether omits references to the comparative structure of animals, which seems to us one of the most interesting departments of the subject. We have not yet seen anything in our language to equal the first part of the " Elémens de Zoologie" of M. Milne-Edwards; and we think that a concise treatise, similar to this in general plan, might be extensively used in our schools with great advantage to the rising generation.

The following case related by Dr. Aitkin will, we think, be interesting to many of our readers, from its character being exactly the converse of one which we formerly detailed. (Vol. IV. p. 500.)

" A youth fell from a wall ten feet high on a hard footpath, and was taken up insensible. Half an hour after, he was found in the same condition; blood flowed from the left ear, behind which, from external marks, it was evident the head had been struck. While he lay in a state of insensibility, with laborious breathing, the difference between the right and left side of the face was most striking: the right was thrown into a state of great agitation, and frequently affected with convulsive twitches, the eyelids contracted, the nostril dilated, and the angle of the mouth drawn up spasmodically on every inspiration. On the contrary, the left side remained in a state of perfect placidity. After his recovery from the more dangerous consequences, it was ascertained that the left side of the face had sustained permanent injury, which no means that were had recourse to had the effect of removing. His speech was also affected, having become hesitating and stammering. The unusual expression of his face and impediment of speech attracting the attention and ridicule of his thoughtless associates, he became morose in his temper and unsocial in his habits. He is now a very athletic young man, but still prefers solitude with his books, and is keenly alive to the peculiarities of his features and speech. Among those with whom he is in the habits of intimacy, and when he is off his guard, it is extremely curious to watch the changes of his countenance. If he laughs, it is only with one side of his face; when he frowns, the left side remains in a state of perfect indifference, as is the case whatever mental excitement he may be under at the time. *He possesses voluntary power over the muscles affected as completely as ever*, and the sensibility has never in the slightest degree been impaired. The commands of the will continue to be communicated to the muscles through the facial nerve, which received the shock, while the impulses of sympathy are no longer transmitted by it."

Cases exactly parallel to this and the one formerly quoted by us, but involving another class of sympathetic movements,—those of the chest in respiration,—will be found in the appendix to Sir C. Bell's volume on the Nerves. In some of these there has been paralysis of the respiratory muscles to the influence of the will, but their regular sympathetic movements have continued; whilst in others *these* have been interrupted, whilst the will has remained capable of producing contractions.

Art. XIII.

Ophthalmia. The various Inflammations of the Conjunctiva or Mucous Membrane of the Eye. By J. SLADE, M.D.—*London*, 1838. 8vo. pp. 120.

WE are of opinion that Dr. Slade has committed an uncalled-for and useless act of injustice to his own work, by inserting the following paragraph in the title-page: " This treatise will be found useful to country families, and particularly to those persons who prescribe for the sick poor in the absence of medical assistance." This was probably an afterthought, or the suggestion of some well-meaning friend; for we observe the title-page has been printed separately from the body of the work,— in fact, reprinted. Dr. S.'s essay is not at all of a popular cast, and would prove supremely useless in the hands of any one but a medical practitioner: it is full of technicalities, and utterly beyond the conception of any one unacquainted with anatomy and pathology. What would Lady Bountiful make of the projected experiment of inoculating the eyes of twenty infants with gonorrhœal matter? (p. 72;) or what would be her feelings on reading that " there are few systems unmixed with scrofula, scurvy, or syphilis?" (p. 14.)

Considered as an essay on the inflammations of the conjunctiva, the work is above mediocrity: it is a good repetition, in fact, in somewhat altered language, of what is to be found in all the modern English treatises on the diseases of the eye, without containing one single new pathological or practical idea. We cannot agree with the author that " the different inflammations of the conjunctiva have never been considered upon the plan pursued in the present treatise." Upon what other plan, we would ask, have they been considered by Lawrence, Mackenzie, and the other English systematists of the present day? These authors have considered them exactly on the plan followed by Dr. Slade.

Dr. S.'s style is often very faulty; for example, the following sentences, among many others: " When once this tunic [the cornea] is wholly opaque, so as to prevent the admission of light, there is no remedy for its removal." (p. 15.) " The curability of the disease depends much," " according to the violence of the degree, &c." (p. 16.) " Persons employed in iron-foundries, glass manufactories, in any occupation where heat is accompanied by reflected light, which is always worse than direct light, such as might proceed from the sun or lightning, are frequent promoters of conjunctivitis." (p. 28.) Such phrases as " sensitivity," (p. 4;) " increased action in the circulating medium," by circulating medium being meant the blood-vessels, (p. 8;) " desight,"

for deformity, (p. 41,) &c. are also objectionable: but let us turn to matters of more importance.

Dr. S. states (p. 2,) that "the conjunctiva is perforated by ducts, called ciliary ducts." Now, it is well known, and evident, indeed, on the slightest examination, that the Meibomian or ciliary ducts do not open in the conjunctiva, but in the skin, near the inner margin of the edge of the eyelid, (*margo internus limbi palpebræ*.) Speaking of the external lamina of the cornea which he calls *conjunctiva corneæ*, (p. 4,) Dr. S. tells us that its connexion with the cornea "is so firm, that maceration, dissection some time after death, and disease only, are capable of apprizing us that the membrane is extended over the cornea." He does not appear to be aware of the simple experiment of throwing the eye and eyelids into boiling water, which in a moment coagulates the external lamina of the cornea, while it has no such effect on the conjunctiva, raises it in blisters, and at once demonstrates the existence of a membrane continuous with the conjunctiva and investing the cornea, and the physical differences in the character of this membrane and the conjunctiva. Because one membrane is continued into another, and that even abruptly, we must not conclude that they are of the same nature. On the fringes of the *morsus diaboli* we have a mucous membrane abruptly joining a serous membrane. On the surface of the eyeball we have a membrane, not coagulable by heat, suddenly terminating in one which immediately coagulates, like white of egg, on being submitted to the action of boiling water. The latter is continuous with the conjunctiva, but is not conjunctiva. Its proper appellation is *epikeratoeides*. Haller (*First Lines of Physiology*, § D,) believed this membrane to be double; and probably he was correct.

While discussing (p. 8) the state of the vessels in conjunctivitis, Dr. S. remarks, that "here we find the tubes gorged or overloaded with those red particles of blood which they are not destined to carry in health." It is impossible to know whether he means that the vessels are gorged with an extra quantity of red blood, or that they in health carry only colourless blood, but are now filled with red globules. If the latter is his opinion, we believe it to be erroneous. Every physiologist knows that, in the fine capillary vessels, such as most of those of the sclerotic conjunctiva, those of the cornea and its tunic, and those of the crystalline capsule, the red particles flow one after another in a single series; that, when they flow thus singly, as each measures only the three-thousandth or four-thousandth part of an inch in diameter, the vessels in which they are moving are invisible to the naked eye; and that it is only when the red globules are accumulated, and are running numerously side by side, that the vessels appear red. Capillaries carrying colourless blood appear to have no existence in any part of the body.

Dr. S. (p. 34) speaks of hypopium occurring in corneitis, (certainly a very rare event,) and tells us that the matter is "supplied by the cornea through an ulcerous aperture of the posterior layer." Certainly we have seen this happen once or twice in scrofulous abscess of the cornea, but never in corneitis. The tendency of matter, deposited even in the depth of the cornea, is generally outwards; conformably to the common law, that abscesses extend towards the surface, and shun the cavities of

the body. We suspect that abscess of the cornea is often mistaken for hypopium. In the inflammations of the conjunctiva, Dr. S. appears (p. 44) inclined to trust a good deal to the efforts of nature, which " is both willing (he says,) and able to do much towards repairing any mischief that disease may incur." We believe, on the contrary, that there is no class of diseases in which there is less tendency to a natural cure than the inflammations of the conjunctiva. Catarrhal ophthalmia, for instance, if neglected, readily passes into the granular stage; the consequence of which is, too often, nebulo-vascular cornea and permanently impaired vision.

The instrument best adapted for removing foreign particles adhering to the corneal conjunctiva or imbedded in that membrane, Dr. S. considers to be a cataract-needle. A small, elastic, silver spatula is less formidable to the patient, and detaches the foreign body more readily, with less pain, and less abrasion of the corneal covering. Dr. S. dissuades from venesection, unless the system be plethoric; and, especially if the conjunctivitis is scrofulous: he says (p. 51,) " it should be avoided, even if the inflammation is very active." On this point we differ entirely with our author. In active scrofulous inflammation of the conjunctiva, especially in adolescents or adults, venesection is both useful and necessary. Dr. S. recommends (p. 52) leeches to be applied chiefly to the external surface of the lids. The side of the nose, over the nasal vein, is a preferable situation: two or three leeches placed there generally cause as much discharge of blood as twice that number on the lids. In acute conjunctivitis, Dr. S. thinks we should seldom venture to scarify, (p. 52.) "unless it is by making one deep incision the length of the palpebra." The disadvantage of making a deep incision is, that the central ducts of the Meibomian glands are cut across, and probably become obliterated. We are friendly to scarification in all the mucous ophthalmiæ; but we try to limit the depth of our incision to the swoln conjunctiva, and avoid dividing the fine lamina of tarsus, which intervenes between the conjunctiva and the Meibomian glands. We have no fears respecting the effects of scarifying in gonorrhœal ophthalmia: Dr. S. has terrified himself unnecessarily (p. 53) about the specific virus coming in contact with the divided surfaces. Even the removal of a fold of the chemosed membrane is a good practice in that disease.

We must confess we have been somewhat startled at Dr. S.'s recommendation of Goulard water, Goulard extract, and other preparations of lead, in the ophthalmiæ, (see pp. 54, 67, 95.) To use the words of our author, " It need not be said they are to be abandoned." If any one doubts of this, let him look at the figures accompanying Dr. Jacob's paper in the fifth volume of the Dublin Hospital Reports. If there is the least excoriation or ulceration of the conjunctiva or of the epikeratoeides, there the lead is immediately precipitated and fixed, forming an opacity, which is in general indelible. Even the druggist's apprentices begin to know this, and refuse to sell sugar of lead to make a wash for a sore eye. In treating of the ophthalmia neonatorum, Dr. S. repeats his irrelevant objection to scarifying the conjunctiva, and recommends blisters (p. 84) only as a last resource. We have found a blister behind the ear of great service in this ophthalmia, even within two or three days of its commencement.

" Syphilis, whereof the nature of gonorrhœa partakes," (p. 90,) is a clause showing at once Dr. S.'s notions on these two diseases, and his bad style of writing; but which we cannot stop to criticise now.

Speaking of gonorrhœal ophthalmia, Dr. S. asserts, that " a singular circumstance connected with this disease is, that females are never its victims." Now, cases are recorded by Wardrop, Delpech, and Bacot, of women being inoculated with gonorrhœa in the eyes, from the use of infected sponges and the like;* so that this remark of Dr. S. must be limited to there being no recorded case of a woman inoculating her eyes from her own body directly; but there seems no impossibility of such an event. As to the treatment of gonorrhœal ophthalmia, Dr. S. tells us that some trust to a free antiphlogistic course, but that his experience decides in favour of the astringent plan. Undoubtedly, the true mode is to combine the two; to bleed generally and locally, and to wash the conjunctiva with a solution of from two to eight grains of lunar caustic in an ounce of distilled (not rose) water.

With regard to variolous ophthalmia, we would ask Dr. S. if he ever saw a variolous pustule on the cornea? We never did, and believe such a thing never happens. Dr. S. takes no notice of the secondary variolous ophthalmia, which so frequently destroys vision, by causing abscess and bursting of the cornea.

The case of Mary Flint (p. 113) appears to be neither more nor less than one of fungus hæmatodes; and we would recommend Dr. S. to withdraw the absurd statement, from his next edition, of the surgeon's having destroyed the sight of one eye while scarifying the lids of the other.

We cannot agree with Dr. S.'s remark, that in scrofulous ophthalmia "leeches are seldom demanded." (p. 117.) Nor can we yield assent to the assertion that " lotions have no specific virtues, if we except an evaporating one." (p. 118.) Leeches to the side of the nose and eyelids generally relieve in scrofulous ophthalmia; while a lotion of from one to two drachms of vinum belladonnæ in eight ounces of water, used warm, removes the intolerance of light in so remarkable a manner as to merit, we think, the appellation of a specific remedy.

We trust Dr. S. will take these criticisms in good part: they refer to small fractions of his book only. On the whole, we judge very favorably of his ophthalmological attainments, from a careful perusal of his essay. The diagnosis is pursued with minuteness and accuracy, and the practice recommended is, in general, highly judicious. We would particularly recommend to some of our modern systematists, Dr. S.'s distinction of simple mucous conjunctivitis from catarrhal ophthalmia, which are too much confounded; and to practitioners generally we would say, Read and study Dr. S.'s book.

* See Lawrence on Venereal Diseases of the Eye, p. 32.

PART SECOND.

Bibliographical Notices.

ART. I.—*A Treatise on Inflammation.* By JAMES MACARTNEY, M.D.
F.R.S. F.L.S. M.R.I.A. &c.—*London,* 1834. 4to. pp. 214.

It is with extreme regret that we have been compelled, by want of
room, to postpone, for the present, all detailed notice of this most inte-
resting and valuable volume. We had combined Dr. Macartney's with
the recent work of Rasori, and with Mr. Palmer's new edition of the
immortal treatise of Hunter, in one extensive review of the subject of
Inflammation. This we shall lay before our readers in our next Number;
but we cannot allow the present to come out without some notice, how-
ever imperfect, of Dr. Macartney's work. The station which Dr. Macartney
has so long held, with no less credit to himself than advantage to his
numerous pupils, as well as his high character as a member of our pro-
fession, ensures from us and from all his brethren, respectful attention to
anything that comes from his pen, and, in an especial manner, to a work
like the present, which professes to embody the opinions and doctrines
which he has so long entertained and promulgated as a teacher. But
we are confident that he would not desire us to be warped by his autho-
rity into an expression of concurrence, where we feel solid reason to dis-
sent; or of approbation, where we find ground for unfavorable criticism.
We shall therefore, in our promised article, take leave to express our-
selves freely, but impartially, upon the merits of his production, which is
to be regarded less as a treatise on inflammation than as an exposition of
the author's peculiar opinions on that subject. Those who expect to find
in it a comprehensive view of the researches of past and contemporary
authors on the various questions discussed, will be disappointed. Scarcely
any authority is mentioned but that of Hunter; and he is only brought
in when it appeared that his doctrines could be made to accord with those
of the author. We do not quarrel with Dr. M. for this; since every man
has a right to publish his own doctrines, with as little reference as he
thinks proper to those of others; but we think that another title might
have been more appropriate than that which Dr. M. has chosen. On
many topics, both theoretical and practical, we are disposed fully to agree
with Dr. Macartney, and even to attribute to him the credit of having
made important improvements in pathological science, and in the thera-
peutic art. Nevertheless, we are constrained to say that he seems to us
very far from having done justice to his own doctrines. He professes,
in the preface, to have "sacrificed every quality of the style to perspi-
cuity;" and, though we have little complaint to make of deficiency in the
latter, there is an air of poverty and meagerness about the whole exposi-
tion that we should not have expected from a teacher of Dr. M.'s expe-
rience and acknowledged excellence. We shall not be surprised.

therefore, if the work fails to make as many converts to the author's opinions as he might expect, and even if certain defects in it should prejudice some readers against the really philosophical reasonings and judicious distinctions which we believe it to contain. Some of the plans of treatment recommended in this volume are of the very first importance, and we earnestly recommend our readers to look for them in its pages, without delay. We regret, however, to be compelled to say, that we think the very unnecessarily expensive form in which Dr. Macartney has put forth his book, will be a very serious obstacle to its general circulation. We should certainly wish to see it in the hands of every member of the profession, who is not too much wedded to old opinions and modes of treatment, to resist the introduction of new ones which can be shown to be improvements, both in a scientific and practical view. But the limited means of many of our brethren will not allow them to lay out fifteen shillings on a work which might as well have been sold, in a different form, for five or six. A "rivulet of print running through a meadow of margin" is a very charming thing to the eyes of some who read for the mere gratification of their taste; but it is no refreshment to the eyes of the industrious student, by whose utilitarian soul all the blank space is profanely regarded as so much waste paper.

ART. II.—*A Fact in the Natural Children, hitherto unobserved, which explains much concerning Infantile Diseases and Mortality.* By JOHN GARDNER, Surgeon.—*London*, 1838. 8vo. pp. 23.

MR. GARDNER's little pamphlet of twenty-three pages contains some clear and well-expressed remarks on the changes which are observed during the gradual progress of development up to the adult age. He observes, that the whole body "becomes thirty times as great as at birth, whilst the weight of the brain is only quadrupled; and of this increase the greater part is accomplished within six years, by which time it has tripled its original weight." (p. 7.) This shows that the most considerable, and therefore important, changes of development which the brain undergoes are confined to a comparatively short period of time; a period which must therefore be more peculiarly liable to those derangements which result from a loss of the due order and regularity with which the successive steps and changes of growth are effected.

In a vast metropolis like this, where so many causes almost unavoidably conspire to check that tone and vigour of health upon which the normal action of the different functions and other vital processes depend, it appears to us extraordinary that the changes of development and growth belonging to early life, and which require such great efforts of the system to effect, can ever be completed, in addition to the other and more common changes, without overturning the equilibrium of the nicely balanced machine, and deranging the regularity and harmony of its numerous but beautifully adapted movements.

"Corresponding with the rate of its (the brain's) growth," says Mr. Gardner, " is the development or assumption of its powers and offices. The instinctive actions of sucking and crying, the vital impulses to the organs of nutrition, circulation, and secretion, being necessary to existence, the brain is adapted to their exercise. The

sensations of vision, taste, smell, hearing, and touch, the muscular states, and the power of controlling by the will the muscular motions, come gradually into play. The preparation of the future mind proceeds in order; certain associations are indissolubly established between the different sensations, before the power of recording impressions or the consciousness of passing feelings comes into action. In due time, recollection, memory, the faculty of speech, the power of walking, and other less obvious functions, become successively developed; all requiring the gradual and orderly growth of the brain, until its completion in size marks the attainment of all its faculties, which require but due culture and exercise to achieve all the mighty workings of mind." (p. 7.)

Mr. Gardner brings his subject before the reader under three heads or propositions :

" 1st. The gradual, equal, or rather normal, development of the brain is essentially necessary to a state of average health and *vital* strength in the constitution of childhood.

" 2d. An irregular, unequal, accelerated, *abnormal* (or disordered) *rate of growth of the brain*, or any part of this organ, gives a peculiar character to a child's constitution, rendering it vitally weak, susceptible of morbid impressions, and an easy prey to ordinary diseases.

" 3d. Such a condition of the brain is widely prevalent among children, and is *traceable in the external form of the head.*" (p. 9.)

This condition of the brain the author proposes to designate by the term *Kephalosis.*

"The signs by which this state of the brain is recognized being manifested in the external form of the head, although with certain concomitant marks in the general system." (p. 11.)

" These irregularities in its form, even when slight, will be easily detected by a practised eye; but, when the development has proceeded to an important extent, a mere casual observer will perceive it." . . . " The overhanging of some point of the fore part of the brain beyond the lowest point,—the situation of which is marked by the root of the nose,—is always an indication that the brain is undergoing an abnormal development." . . . " The lowest point of the anterior lobes of the brain is always most forward in a condition of perfect health; and the line of the forehead makes either a right angle or a slightly acute angle with it. If that line form an obtuse angle at this point, kephalosis exists; and the forms of the bones, their connexion, and relation to the fontanelles are such as to lead most commonly to this deviation from the healthy outline of the forehead, at whatever part of the brain the accelerated growth is proceeding." (p. 13.)

Mr. Gardner considers that, by carefully observing the shape of the head in children, the practitioner may frequently detect any tendency to morbid development of the brain, and divert the mischief which is threatened. He attempts to distinguish this condition from rachitis and struma, but, we think, without success; both of these diseases being essentially connected with, or even dependent upon, a defective state of the processes of development. Mr. G. concludes with a few observations on the signs and consequences of Kephalosis. In these we see nothing particularly new or interesting, nor in any way equal to the passages which we have just quoted. He appears to have read Dr. Gooch's translation of Gölis's work on Hydrocephalus with much attention; but the essay would have been much more complete if we had been favoured with even a glimpse of the author's method of treatment. When the symptoms and characters of a disease are described, which the author tells us he can cure, we naturally look for some account of the means by which he effects this desirable end. The observations at the commencement are

too good to make us suppose that any intentional concealment is intended; and we therefore trust that Mr. Gardner will, ere long, favour us with a fuller consideration of so important a subject, of which the present pamphlet is merely the preamble.

Art. III.—*The first Fasciculus, second Fasciculus, and third Fasciculus of Anatomical Drawings, selected from the Collection of Morbid Anatomy in the Army Medical Museum at Chatham.*—London, 1824, 1834, 1838. Imperial folio.

The first of these fasciculi was published in 1824; the second and third at intervals of ten and four years respectively. The selection of the subjects is judicious, and the artistical execution, particularly of the two last, sufficient for all the purposes which uncoloured representations of disease can serve,—viz. to give a more clear conception of its anatomical characters than can be conveyed by any description of them, however detailed. We, however, never can look at such representations of morbid structure without feeling strongly their deficiency from want of colour, for which no description can be an adequate substitute; and we feel this deficiency the more in the plates before us, that no allusion is made to this most important physical character of the diseases described; and that no attempt has been made to increase the value of the plates by letters of reference to the most important parts of the disease represented in each figure. We notice this latter defect, as it may easily be remedied in the succeeding fasciculi; and we would also suggest that more care be taken in correcting the letter-press, as an error has been committed in the numbering of some of the figures in plate ii., second fasciculus; and a much more serious one in the description of fig. 3, in which it is stated that pulmonary emphysema "consists in large *cul-de-sac* dilatations of the extremities of the bronchial tubes;" an error respecting the anatomical characters of the disease which is repeated in the descriptions of fig. 5, plate iii.

Were we to particularize any of the drawings as more characteristic than others of the morbid appearances represented in these fasciculi, we would refer to those met with in the intestines in dysentery and in some forms of typhoid fever. Fig. 1, plate ii., third fasc., represents a remarkable case of lumbrici, contained in the biliary ducts and gall-bladder. A great many of these worms, of considerable size, are seen coiled up in the latter organ; and it is stated that "in some places they had *penetrated* through the ducts and the substance of the liver, into the cavity of the abdomen." But the opinion that any of the entozoa of the human body give rise to perforation of organs, otherwise than by exciting inflammation and ulceration, has been shown, by recent pathologists, to be altogether erroneous.   In plate i., third fasc., six drawings are given of what is denominated "a species of organic disease of the liver, of an obscure kind, and, as it is believed, not yet described." From the inspection, however, as well as from the description (which is very imperfect) of the drawings, we think we can recognize appearances which we have met with several times in some forms of cirrhosis. Indeed, the so-called tuberculated state of the liver, now known under the name of

cirrhosis, is pointed out, in the description of the drawings, as accompanying the morbid condition in question, except in one of the cases; a morbid condition which is described as consisting in the presence " of numerous well-defined excavations." Having met with similar appearances only in cirrhosis, and in that state of the disease in which the portal circulation has been arrested for some time before death, we believe those shown in the drawings to be of the same nature. The blood, fibrine, and frequently an admixture of bile, is found, under such circumstances, accumulated in the portal veins; which, being removed by pressure and washing, the empty orifices of these vessels appear on the cut surface of the liver like so many cells; thus giving rise to appearances similar to those represented in the drawings. Plates ix. and x. contain a number of interesting illustrations of the appearances which accompany the reparation of bone after fracture, and more especially the peculiarities of this process in fracture of the patella, produced experimentally in animals; and also some of the leading phenomena of necrosis, the results of experiments made by Mr. Gulliver.

We feel pleasure in offering our meed of praise to the officers of the medical department of the army at Chatham, who have been engaged in the publication of these fasciculi. The researches necessary to the collecting and preparing the materials for such an undertaking require much time, and the sacrifice of more agreeable and even profitable pursuits. We hope the undertaking will meet with sufficient encouragement to enable the authors to proceed with their illustrations of the valuable collection of morbid preparations contained in the Army Medical Museum, which we are glad to find is increasing both in extent and usefulness.

ART. IV.—*The Medical Portrait Gallery.* Nos. IV.—IX. By T. J. PETTIGREW, F.R.S. &c.—*London,* 1838.

SINCE we noticed this work in our eleventh Number, six more Parts have been published, containing portraits and memoirs of the following distinguished persons: Dr. Blundell, Caius, Morgagni, Radcliffe, Bichat, Sir A. Cooper, Dr. Copland, Dr. Cooke, Mead, Dr. William Hunter, Dr. Jenner, Dr. Baron, Dr. Baillie, Dr. Bright, Sir B. Brodie, John Hunter, Mr. Lawrence. We are much pleased to find that Mr. Pettigrew has obtained sufficient encouragement to induce him to proceed with the publication; as, with some considerable faults of plan and execution, it is unquestionably a very interesting and attractive work, and, we trust, will obtain the general patronage of the medical profession. The portraits are, in general, remarkably good, both as to the likeness and execution; and the whole publication is extremely elegant and singularly cheap. The more recent parts contain a much larger proportion of the living members of the profession than the earlier ones; but we trust the author intends to give us all the really illustrious men of former days, of whom authentic portraits exist, before he descends from the higher class of his contemporaries, to cater to the vanity of those who, however estimable in their own circle and in their own generation, possess not that buoyancy of genius and knowledge which will enable

them "to tread the waves of glory" through the ages that come after ours. Hitherto, with one or two exceptions, Mr. Pettigrew has avoided this open snare; and we name it now more as a friendly warning for the future than in reproof of the past. We renew our warning also against the superfluous glorification of the living; although, as we can hardly believe that these biographies of his contemporaries are drawn up without the knowledge of the subjects of them, we shall henceforth be disposed to reserve our censures (if there be cause for such) rather for the vanity of the painted than the unworthy adulation of the painter. Of the proper subjects of biography, the dead, let the truth be boldly spoken, whether good or evil; but, as it is impossible to censure a man who, if he is not our personal friend, has, at least, shown us courtesy by sitting to us for his portrait, or has supplied us with the materials for its composition, so we ought, in fairness, to restrain ourselves from all unseemly praise, and assuredly from all flattery. Without any thing of this kind, enough remains to the contemporary biographer, in the statement of undoubted *facts*,—which, after all, are, to the worthy, the truest praise. Of this kind are the exact age, place of birth, studies, nature and date of appointments, publication of writings, &c. &c.; and we are sorry to say that, in such useful information as this, some of the biographical notices are very deficient. We particularly request Mr. Pettigrew's attention to the subject last mentioned. It would be an easy task for him to make each of his notices accurately *bibliographical* as well as *biographical;* and if he could assure his readers that they might refer with confidence to his work for authentic records of the title, date, and extent of all the writings of the individuals commemorated, as well as of the more prominent points in their personal history, he might rest assured that his work would not only deserve but obtain that permanent station in literature which ought to be the aim of every author who is actuated by worthy motives. If these things were attended to, we could well excuse the omission of Mr. Pettigrew's criticisms on writings with which most of his readers are familiar; and still better could we spare the heavy truisms and the threadbare poetical quotations with which it is the author's pleasure to load his pages. The general character, indeed, of the memoirs is that flat mediocrity which used to be endurable neither to gods, to men, nor to columns; and which is assuredly more distasteful to reviewers and critics than the most glaring faults that, in works of another class, are relieved by the thousand attendant compensations of genius. A friend, to whom we showed these memoirs, and whose opinion of them we requested, gave it in the words of the satirist:

> "Too bad for a blessing, too good for a curse,
> I wish from my soul they were better or worse."

We hope Mr. Pettigrew will take care so to improve and perfect his work as to put it out of the power of any one, who like himself may have a passion for mottoes, justly to adopt these lines as the general epigraph of his biographies.

Art. V.—*The Power, Wisdom, and Goodness of God, as displayed in the Animal Creation: showing the remarkable Agreement between this Department of Nature and Revelation. In a Series of Letters.* By C. Burnett, m.r.c.s.—*London,* 1838.   8vo. pp. 530.

Although this book is written with a very laudable object, and with a pleasant freedom of style which will render it acceptable to the general reader, we cannot perceive any such novelty, either in its plan or style of execution, as need have demanded its publication.   We have scarcely noticed a single fact which is not already familiar to the readers of the various widely-diffused popular essays on this subject: indeed, a very large part of the volume is made up of quotations from the Bridgewater Treatises and other similar productions.   We have often wished that some one competent to the task would bring together, in a compendious form, the reasonings scattered through that valuable series, supplying many links which the unphilosophical partition of the subject has left unfilled, and suppressing the many repetitions which the peruser of the whole encounters.   Such, we at first hoped, was the object of the author of the present volume, in regard to the animal creation at least; but, though his avowed scope is so wide, the number of subjects he has embraced is really very small.   The first two letters are designed to overthrow the received doctrines of geology, and to establish the propriety of the literal interpretation of the Mosaic account of the creation.   We shall not here enter upon the discussion of this *quæstio vexata,* since it is out of our province; but we would recommend to Mr. Burnett and his friends the perusal of a work which we have formerly noticed with approbation, and which emanates from a source that at once protects it from the imputation of regardlessness of the value of the sacred records, and establishes its claim to impartial attention: we allude to the essay on the " Connexion between natural and revealed Truth," by the Rev. Professor Powell, of Oxford.   The view which is there given of the present state of geological science, in reference to what is regarded by many as revealed truth, is, we have reason to know, adopted by some of the highest authorities on the subject, and is much better worth Mr. Burnett's attention than the hypothesis which rests upon the extension of the " day," which is now abandoned by most geologists of eminence in this country. We are sorry to be obliged to speak with disapprobation of many other parts of Mr. Burnett's treatise, which are likely to mislead the general reader.   For instance, he speaks (p. 151) of heat as "the prime agent in carrying on the functions of every organ of the body;" and then tells us that " this power is not inherent in itself, but is communicated to it by the agency of another principle, called electricity, which is rendered subservient to the purposes of animal existence by means of a particular set of organs, whose function it is to transmit it."   From this it follows that " heat and electricity, by their joint influence, produce the phenomena of secretion."   Further on, we find it stated that "it is quite evident that, in the present state of science, our knowledge of the principle of life is limited to the fact that atmospheric air, by means of the stimulating power of its oxygen, propels the blood through the lungs, and thus gives rise to all the vital phenomena." (p. 162.)   We are really sorry to be obliged thus to put our readers on their guard against the doctrines

laid down in this work, because, as we have already said, it is written
with a laudable object, and conveys much useful information in a gene-
rally acceptable style; and we shall therefore close our notice with what
may be regarded as favorable specimens of the author's style in descrip-
tion and in deduction.

"Perhaps the most singular adaptation of the eye to the two media of air and water
is seen in the anableps, an animal which inhabits the rivers of Guiana. The orbit or
socket of the eyeball extends so far above the head, that the eye, as the animal swims
near the surface, is partly in and partly out of the water; and all its internal parts
correspond with this curious external conformation. The iris being partially divided
into an upper and a lower portion, there are consequently two distinct pupils; the
cornea consists of two globes, an upper and a lower one, attached together but di-
vided by a dark band; the anterior lobe, which the animal uses out of the water, is
in all respects like the eye of terrestrial animals, adapted to refract rays transmitted
through the rare medium of air; the inferior one, which is always under the water,
like the eye of aquatic animals, is adapted to refract light transmitted through the
denser medium of water. So that the refracting power of the upper globe is less than
that of the lower." (p. 410.)

"Animals, in their natural language of inarticulate sounds and gestures, find a
facility of expression amply sufficient to serve the limited purposes of their creation;
but man, whose race is spread over every climate of the globe, and whose progression
depends upon the intellectual exertions which he is able to make, finds in artificial
language the only means of communication commensurate with his wants and worthy
of his exalted nature. Speech, then, loudly proclaims the fact that man possesses
the superior powers of reason and judgment, which involve the high moral responsi-
bility that attaches to his existence here; and hence, by a chain of reasoning which
forces itself upon our minds, we are led to the conviction that he has been placed on
the earth by a wise and intelligent Being, for objects and purposes which, bearing
no relation to anything in the present state of existence, silently but awfully remind
him that he is on his passage to another, and, as he is taught to believe, a happier and
a higher sphere." (p. 212.)

Art. VI.—*The Science of the Cerebro-spinal Phenomena attempted.*
By John S. Waugh, m.d.—*London*, 1838. 12mo. pp. 172.

We have, in the course of our labours, had occasion to comment on
the medical literature of many foreign states, and have shown that the
languages of France, Germany, Denmark, Sweden, Russia, Italy, Spain,
and Portugal are alike familiar to us with our mother-tongue. We will
undertake to learn those of Persia, China, New Zealand, and Tahiti,
when we receive any medical works for review from those countries: but
we must confess our unwillingness to devote our valuable time to the ac-
quirement of a new language only employed by its inventor, and for the
value of which we have only his own word. We cannot help thinking
that the author of the volume before us is desirous of concealing for a time
the grand discoveries which he professes to have set forth in it, as learned
men did of old in their anagrams and riddles; and that we shall, when
they are fully ripe, be favoured with an explanation of them in plain
English. We beg to present to our readers the following specimen of
the new language, extracted from the preface, in which we should have
expected to find little but ordinary diction, or, at any rate, to be gradu-
ally introduced to the author's nomenclature.

"The cerebro-spinal influence, flowing by cerebro-dëal filaments into the sympa-
thetic ganglions, is entirely unspecial as to the functions of these centres. The

arrangement and connexion of sympa-versal and of sympa-dèal filaments in a sympathetic ganglion are altogether independent of the cerebro-spinal fasciculus, which conducts such unspecial influence to such ganglion." (p. xvii.)   .   .   .   .   "The laws of transition of the unspecial perceptive oli-versal filaments, and of non-transition of the unspecial protective versal filaments, inducted by analogy from the laws of transition and non-transition of the special filaments of the same orders, furnished me with a most satisfactory explanation, not only of the curvilinear lines on each side of the median line of the corpus callosum, but also of the lyre, and the longitudinal channels on the edges of the fornix." (p. iii.)

The author tells us that, "having discovered a general law, he was able, on several occasions, to predict from it the ultimate destination of fasciculi, and much minute anatomy in the cerebro-spinal mass, of which he had previously been unaware, but the truth of which was afterwards confirmed by the descriptions of those who had no theories to support, but detailed without prejudice what they saw. The capability of such predictions is an attribute of true science." (p. ii.)   Animated by these promises of a rich harvest of discovery, we were addressing ourselves seriously to the study of Dr. Waugh's enigmatical production, when we met with the following passage:

"There are many anatomical, physiological, and pathological considerations in support of the semilunar ganglion being the organ of residence of the soul of man, or where this is impressed by the perceptive influence, which I have not space here to dwell upon." (p. xx.)

On reading this, we were immediately seized with a strange feeling in the præcordial region, which, before we were enlightened by Dr. Waugh as to the residence of the soul, we should have mistaken for nausea. This feeling, whatever it may be, obliged us to lay down the book: and it has returned whenever we have opened it, so that we have, from due consideration of our own health, been compelled to abandon the task. Should any of our less sensitive readers, however, be inclined to furnish us with a brief and intelligible analysis of Dr. Waugh's views, (in which we doubt not that something worth the examination may be detected,) we will do our best to make them public.

ART. VII. — *Human Physiology; illustrated by Engravings.* By ROBLEY DUNGLISON, M.D. M.A.P.S. &c. *Third Edition, with numerous Additions and Modifications.—Philadelphia,* 1838. In two Vols. 8vo. pp. 1172.

WE are happy to believe that the rapid sale of the last edition of this valuable work may be regarded as an indication of the extending taste for sound physiological knowledge in the American schools; and what we then said of its merits will show that we regarded it as deserving the reception it has experienced; since, without claim to originality of thought, it presented the student with a judicious summary of the state of knowledge in most departments of the subject. In preparing for the present edition, Dr. Dunglison has, we are glad to perceive, anticipated the recommendation which we gave in regard to the addition of references; and he has thereby not only added very considerably to the value of his work, but has shown an extent of reading which, we confess, we were not prepared by his former edition to expect. He has also availed himself of the additional materials supplied by the works that have been

published in the interval, especially those of Müller and Burdach; so that, as a collection of details on human physiology alone, we do not think that it is surpassed by any other work in our language; and we can recommend it to students in this country as containing much with which they will not be likely to meet elsewhere. Still, however, some parts are a little antiquated; and, in giving the brief results of late enquiries on several topics, we think that the author might have omitted those of older date, which only tend to perplex the reader by their discrepancy. To our own minds, for example, the researches of Dr. Montgomery on the characters of the genuine corpus luteum are perfectly satisfactory; and, by explaining all the facts upon which previous opinions were based, supersede the necessity of reference to them. For, in opposition to such statements as his, founded upon careful and discerning comparison of different structures that have been associated under the same appellation, it is of no avail to bring forwards the vague opinions of Blumenbach or Sir Everard Home. No two authors, however, are ever likely to agree on all departments of a science which involves so many disputed questions as physiology; and it is but fair to say that our opinion of the judicious character of Dr. Dunglison's summary, has been confirmed, in a great majority of instances, by a renewed examination of this edition of his work.

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Art. VIII.—*De Auscultatione Obstetricia. Diss. Inaug.* Auct. A. C. Conradi.—*Christianiæ*, 1837. 12mo. pp. 66.
On Obstetrical Auscultation. By A. C. Conradi, m.d.—*Christiania*, 1837. 12mo. pp. 66.

The pages of this dissertation may be conveniently referred to by those in search of an accurate register of the opinions of all writers on obstetric auscultation. Besides this, the details on the phenomena occurring during the act of parturition are sufficiently novel to authorize our devoting to them a share of our space. According to Dr. Conradi, then, immediately before labour commences, the force and sonorousness of the *simple* or *placental* (for he is an advocate, though on no original grounds that we can see, of the theory that fixes their seat in the placenta,) pulsations increase. When the pains commence the beats grow weaker, and appear more distant in proportion to the energy of the former. When the uterine contractions are at their maximum the sounds disappear, returning after their cessation. When the arterial pulse varies during labour, the simple pulsations undergo a corresponding change. In the commencing stage, while the pains are comparatively short and trifling, the frequency of the pulsations is less than at a more advanced period. In the progress of the labour the number of simple beats increases, and towards the close they are more frequent, even in the intervals between the uterine contractions, than previously. The following example will illustrate these points:

In a woman examined before labour the radial pulse was eighty in a minute; at the commencement of the first stage the number of arterial beats and of placental pulsations in each quarter of a minute was as follows: 20, 21, 22, 20; 20, 20, 20, 20; 20, 20, 20, 21; 22, 20, 20, 20; 20, 20, 22, 21; 20, 20, &c. At the end of the first period: 21, 21, 22, 23; 24, 26, 27, 25; 24, 23, 22, 21; 21, 21, 21, 23; 24, 26, 27, 25, &c. At the end of the second and beginning of the third period: 22, 24, 26,

27; 28, 27, 25, 24; 23, 23, 24, 26; 27, 25, 23, 23; 23, 24, 27, 28; 29, &c.   In the fourth period, after the rupture of the membranes: 23, 24, 26, 28; 28, 27, 25, 24; 24, 25, 26, 27; 29, 28, 26, 27; 26, 28, 29, 30; 31, 31, &c.   The head was now born.

It occasionally happens that the simple pulsations sound weaker rather than stronger as the labour advances.   When this occurs, hemorrhage usually appears, and the force of the beats decreases in the ratio of its abundance.   After the expulsion of the fœtus the placental pulsation in some instances continues to give out its peculiar blowing and murmuring sound, (especially when the uterus is imperfectly contracted;) and, so long as it retains this character, the secundines are not expelled.   In the majority of cases, however, after the birth of the infant, it grows obscure and abrupt, and each beat is separated by a distinct interval from those following and preceding it.   With these characters, the simple pulsation often continues to exist after the expulsion of the placenta, and until the uterus recovers its ante-gravid condition.   The *double* or *fœtal* pulsations also suffer changes during parturition.   Sometimes their situation alters, and they appear in a different place from that they had occupied before the pains.   When the pain ceases they either retain their new or return to their former position.   This peculiar change of place is not observed after the descent of the head into the cavity of the pelvis; the spot from which the sounds issue thenceforth manifestly descends along with the fœtus itself.   Their force and frequency are greatly increased at the commencement of labour, to such an extent that from 160 to 170 double beats are not uncommonly noted in a minute.   When the head enters the cavity of the pelvis their number is little affected.   Dr. Conradi has never observed the sudden decrease from 150 to 90 beats, stated by Thomas to take place at that period of the head's progress, nor found it mentioned by any author.   The statement of Thomas, however, seems to receive some support from the fact ascertained by M. Lediberder, and which is noticed in another place, that the mean number of double pulsations is so few as 83·3 during the first minute after birth.   After the rupture of the membranes and escape of the liquor amnii, the fœtal pulsations always struck the ear with augmented force.   If they grow weak and intermittent, the fœtus is in a state of threatened asphyxia.

Art. IX.—*A System of Practical Surgery : with numerous explanatory Plates, the Drawings after Nature.*   By John Lizars.   Part I.— *Edinburgh*, 1838.   8vo. pp. 220.

It is painful to us to be called on to pass judgment—as, we are sorry to say, we not unfrequently are—on the indifferent or bad productions of men every way respectable and estimable, as well in their professional as private relations.   We are in this predicament while noticing the work whose title we have transcribed above.   We cannot think how so sensible a man as Mr. Lizars could have deemed a book like this to be needed in the present state of our literature; or how, so thinking, a surgeon of his acknowledged excellence should have written so bad a book.

In his dedication, Mr. Lizars tells the president and fellows of the Royal College of Surgeons of Edinburgh that, ever since he has been engaged in the duties of the professorship, he has "felt the want of a

book containing each surgical disease, and the corresponding operation,
succinctly and correctly delineated; so as to be a useful guide to the
student and remembrancer to the practitioner."   Our judgment of it is,
therefore, to be founded on its fitness for the intended object; but, as our
time will not allow us to comment upon its whole contents, we shall select
for examination a single subject, and that the first that presents itself;
viz. *Luxations.*   At page 170, the student is guided to a correct under-
standing of "luxation of shoulder-joint," (Mr. Lizars having a peculiar
habit of omitting definite or indefinite articles, according to some rule
which we have vainly attempted to discover.)   Under this head no men-
tion is made of the *causes* of dislocations of the shoulder-joint; the stu-
dent being left to discover, by some other guide, whether a direct blow
on the shoulder-joint, or force transmitted through the humerus from
either the elbow or hand, is more likely to dislocate the bone.   Surely,
Mr. Lizars must be well aware of the practical importance of studying
causes in dislocations of bones.   The *diagnosis* of luxations of the
shoulder-joint is treated with great simplicity: here it is.

" When the head of the bone of the arm is forced into the axilla, there is marked
depression under the acromion scapulæ, the arm is semi-bent, the patient supports it
with the sound one, and rests it on the thigh or pelvis, and generally complains of a
good deal of pain.   The surgeon cannot raise it to a right angle with the body, and
the attempt aggravates the sufferings.   In a day or two sometimes considerable œde-
matous swelling supervenes." (p. 170.)

Mr. Lizars says not a word about any change in the length of the limb,
or about the separation of the elbow from the side, and the change in
the axis of the bone; or about the head of the bone being capable of
being felt in the axilla; or about flattening of the deltoid muscle; or
about the increased difficulty of diagnosis in cases of luxated shoulder-
joint which are of long standing, &c. &c.   One would think from this
that the diagnosis of luxation of the shoulder-joint were always an easy
task. After giving one mode of reduction for recent cases, and a method
with pulleys for cases of long standing, the curiosity of the student is
sated by the satisfactory instruction that "there are various other modes
of reduction not necessary to be particularized."   On the question of re-
duction after dislocation of some standing, there is literally nothing,
excepting age which is referred to, to guide the student; and not a
single word is there about *differential diagnosis.*   " Simple luxation,
with fracture of the humerus," says Mr. L., " either at its cervix or
middle, now and then occurs; in which case we should first endeavour to
reduce the dislocation, and then to set the fracture."   Mr. Lizars does
not at all state that it is first necessary to find out the coexistence of
fracture and dislocation.

We are sorry to say that the literary merits of this volume are on a par
with its surgical. The following is one instance of the author's contempt
for an antecedent:

" Counter-irritants are rubefacients, blisters, moxas, and setons.   Rubefacients are
designed to redden the skin, or, in other words, to cause a determination to the sur-
face, to remove the inflamed condition of *those* seated in the diseased organ." (p. 19.)

In speaking of the effect of bloodletting, Mr. Lizars says that " the
patient feels *nauseous* and sick even to vomiting:" and the following are
a few among many of the singular infelicities of style with which this vo-
lume abounds:

" The treatment of this affection generally yields to the application of nitrate of silver or potass to the wound." (p. 44.)—" A gland in the groin, before incising, should be allowed to have thoroughly suppurated." (p. 48.)—" Chronic frequently supervenes after the acute, as for instance in ophthalmia, and is also occasionally an idiopathic disease." (p. 13.)—"*Bruit de soufflè.*" (p. 92.)—" All acute inflammations are liable to become chronic; but there is a chronic state which begins *à priori*, as, for instance, that which precedes lumbar and other chronic abscesses, and the formation of tumours." (p. 80.)—" Fomentations and poultices are more useful than cold saturnine lotions, in all instances of acute inflammation; *heat being more natural and manageable than cold.* Caloric subdues the action of the nervous and circulating systems by relaxation and exhaustion, *and can be procured either in cold or hot weather.*" &c. (p. 18.)

It may be thought that we have been somewhat harsh in our comments upon Mr. Lizars' performance: but, when our surgical literature abounds in treatises of great merit, and it is said that a comprehensive *system* is needed, it becomes our duty to expose such glaring defects as those which we have noticed, and which we might easily multiply a hundred-fold. The book has no claim whatsoever to be regarded as a " System of Practical Surgery:" it doubtless contains many valuable facts, and its illustrations are not without utility; but on such grounds as these we cannot recommend it to our readers.

ART. X. — *Questiones Emmenologicas*, scripsit JOH. FRIED. KRIEG, Med. et Chir. Doctor apud Martisburgenses practicus.—*Lipsiæ*, 1838. 4to. pp. 30.
Emmenological Questions. By JOHN FREDERICK KRIEG, M.D. et Chir. —*Leipsig.*

THE work which stands at the head of this notice belongs to a class for which writers, we are happy to say, are not likely to be found in this country; at least, not amongst those who legitimately practise the profession of medicine. There can be no doubt that works replete with indelicacy, and published under the denomination of medical books, are frequently issued from the British press; but of these professional men know nothing, except from the public notices which so incessantly are obtruded before his eye. They in nowise form a portion of his library. They are the odious productions of sordid, wicked, and ignorant charlatans. On the continent, however, works, sometimes made up of details of the most disgusting nature are not unfrequently published by those who rank with scientific men, and whose education has rendered them well qualified to practise the honorable art of medicine. The author of these Emmenological Questions belongs to this class: he is a learned doctor in surgery and medicine, and therefore has some claim upon our notice. As journalists, we give an analysis of his pages, but forbear making any comment upon them: as he has written, so we render.

Dr. Krieg addresses himself to three different subjects, and endeavours to show, 1st, that the menstrual fluid is not a secretion of the uterus, but of the vagina; 2d, that the halitus which is exhaled from the person of a healthy female during menstruation, as likewise the menstrual fluid itself, is the most natural and best emmenagogue; 3d, that the chenopodium olidum, which has an odour resembling that of the menstrual fluid, is not an inefficacious substitute.

I. In support of the first position, Dr. K. states (1) that, in 1829, he

examined the body of a woman of forty years of age, who had menstru-
ated only a few days before death, in which case the cavity of the uterus
was obliterated by cancer, and that it had neither neck nor orifice; (2)
that a blenorrhœa of the uterus can be seen, by aid of the *speculum va-
ginæ*, proceeding from that organ, and which has never been observed
to be the case with the menstrual secretion; (3) that the uterus has never
been known to be distended by retention of the menstrual discharge;
(4) that gravid women have been known to menstruate, and that without
injury to the fœtus, which he conceives could not have been, did the dis-
charge proceed from the uterus; and he states the case of a female who
was at all times amenorrhœal, excepting during pregnancy, when she
regularly menstruated.   He relates other cases to support his view, and
quotes Joh. Bohnius, who dissected a female that was strangled during
the period of the catamenial discharge, in whom the uterus was found
dry, while the vagina was bedewed with menstrual fluid.   Dr. K. does
not altogether deny that there may be a stillicidium of blood from the
uterus; but he contends that the chief and proper seat of the menstrual
secretion is the vagina, and that, whatever blood may be voided by the
uterus, with the exception of the puerperal lochial discharges, is to be
esteemed an hemorrhage, and not a secretion.   He then enters into a
description of the membrane of the vagina, whose structure, he says,
plainly points it out as the secreting organ.   He condemns frequent
washings and excessive cleanliness of these parts, affirming that the
emunctories are thus prematurely closed, when regurgitations of excre-
mentitious humours takes place, and in this way producing many dis-
eases, a long list of which he specifies,—as ovarian tumours, scirrhous
affections, hysteria, diabetes, neuralgia of the abdominal ganglia, &c.; and
which diseases he states most frequently to occur in meretricious women.

II. In reference to the second question, which is the chief purport of
his essay, Dr. Krieg notices the peculiar odour which emanates from fe-
males at the period of puberty; and says that, as the *fomes* of diseased
states are the source of similar diseases in those who may come in contact
with them, so, in like manner, is the fœtor exhaled during the menstrual
period capable of producing the catamenial state in those in whom the
secretion has been suppressed.   He first speaks of the efficacy, as an
emmenagogue, of eating (fasting) well-fermented bread embued with the
halitus!   This impregnation is to be effected by its being worn in the
linen of a female during the catamenial period!   He quotes Hoffmann
as not blushing to recommend the practice.   "Hot bread," says this
author, "taken from the furnace, and carried about a female when under
the influence of menstruation, remedies suppression of the menses, if it
be given to the extent of half a drachm or a drachm, dried and then
soaked in wine; as likewise clean linen, dipped in the menstrual blood
of the virgin sister, and dried and infused in hot wine, which, when
cooled, is to be taken early in the morning; also the being clothed in an
under-shift imbued with the recent discharge, (especially if of one near of
kin,) is proved by experience to excite the discharge when suppressed."
(*Clavis Schræderiana. Halæ*, 1681.)   Dr. Krieg, however, thinks that
these different modes may be nauseous and disagreeable, and having dis-
covered that the halitus exhaled during menstruation is equally effica-
cious, strongly recommends that the amenorrhœal female should be
placed in bed with a healthy virgin during the period of secretion; and

he states, with Hoffmann, that he has found that the more certain effect is produced by a sister or one near of kin.   In support of these views he relates some cases, in all of which cures were effected, though other means had been resisted.   He also recommends inoculation, which is done by introducing *per vaginam* a sponge or lint dipped into the fluid! Dr. K., however, appears to have some misgivings as to the delicacy of his remedy, and tells us, in extenuation, that it has been formerly used by some of the soberest of men, both in the form of tincture, draught, and powder; and especially quotes Daniel Ludovic, physician royal at Saxe Gotha, as recommending and employing it, and as also regretting the disuse into which it had fallen from being esteemed indecent: this, Dr. K. says, it cannot be considered to be, when used by prudent and chaste men: nor can he think it dirty (*sordidus*), if taken from a healthy virgin; nor nauseous, if it be administered to one unconscious of what they take; and, lastly, not indecent (*impius*), if from this remedy health be procured!

III. The concluding portion of this dissertation is taken up with a statement of the efficacy of the chenopodium olidum* in amenorrhœa. He was induced to test its powers from its fœtor so greatly resembling the halitus of the female during menstruation, and he found it answer his warmest expectations.   This herb, he says, may be administered either by itself or with other medicines in torpor and obstruction of the uterine system; adding that its efficacy is attributable to the solvent, repellent, aperient, and excitant properties which it possesses.   Its first effect is that of setting free the suppressed menses, and then of subduing the menstrual colic and neuralgia of the abdominal ganglia: it also relieves many hysterical conditions, and he thinks that it may be useful to excite the venereal stimulus.   He prefers for use the recently expressed juice, either exhibited alone or mixed with wine or spirit, or with the syrups of orange or rhubarb, or (what is more preferable) the syrups of wormwood. By keeping or drying, this plant loses the greater part of its specific odour; and its efficacy is quite destroyed by decoction or extraction. In conclusion, he details two cases in which it proved eminently successful.

Art. XI.—*Practical Surgery: with one hundred and thirty Engravings on Wood.*   By Robert Liston.   *Second Edition.*—*London,* 1838.   8vo. pp. 529.

So short a period has elapsed since we noticed Mr. Liston's work on its first appearance, (*Brit. and For. Med. Review*, No. X. p. 457,) and the opinion of the profession, evinced by an almost immediate call for a new edition, has so unequivocally confirmed the favorable judgment we then pronounced on it, that it is unnecessary to dwell on the character or contents of the volume before us.   We may, however, state that several additions and alterations have been made, and a few new woodcuts added in the present edition; so that our present report of the work, if at all different from that formerly made, must be only more favorable.   It is a volume which no young surgeon should be without.

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* Chenopodium olidum, *seu* Vulvaria, stinking goosefoot : it occurs in waste ground, especially among sand or rubbish near the sea.

ART. XII.—*De Salivâ ejusque vi et utilitate. Diss.Inaug.* Auct. G.VAN
    SETTEN.—*Groningæ*, 1837.   8vo. pp. 61.
On the Action and Uses of the Saliva. By G. VAN SETTEN, M.D.—
    Groningen, 1837.   8vo. pp. 64.

THIS production contains interesting results on those two points of the
chemical history of the saliva that have of late been most warmly de-
bated,—namely, its containing, or not, sulphocyanic acid, and the
character of its reaction.   The analysis was performed on the saliva of a
healthy adult affected with salivary fistula, and, by the following pheno-
mena, gave unquestionable evidence of the presence of the acid.   The
aqueous solution of the alcoholic extract of the saliva having been eva-
porated, and distilled with phosphoric acid, formed a fluid that, on the
addition of perchloride of iron, exhibited the peculiar red tinge charac-
teristic of sulphocyanuret of iron: when disappearing, the colour was
restored by the addition of hydrochloric acid.   Again, on adding to the
distilled liquid a mixture of hydrochloric acid, chloride of potassium and
barium, sulphate of baryta was formed; its acid resulting from the
oxidation of the sulphur contained in the sulphocyanic acid.   The result
is rendered still more certain by the fact that the substance thrown down
from the distilled fluid by the sulphates of iron and copper acquired,
when washed and mixed with potassa, the same red tint on the addition
of perchloride of iron.

We subjoin the analysis given by the author, which the reader will find
to agree pretty closely with that of Gmelin.   100 parts consisted of

A. Solid matter   .   .   .   .   1·62
 B. {
 a. Matter precipitable by water from the alcoholic extract, probably
        phosphorous fat   .   .   .   .
 b. Matter soluble in cold alcohol and in water, containing osmazome,
        sulphocyanic, chloride and acetate of potassa   .   .   . } 36·84
 c. Matter precipitated by cooling from hot alcoholic solution, containing
        animal matter and an alkaline sulphate and chloride   . } 4·72
 d. Substance soluble in water alone, consisting of the salivary principle
        and some salts   .   .   .   . } 15·62
 e. Substance insoluble in water and alcohol   .   .   .   .   43·44

With respect to the reaction of the saliva, it was found

acid, before breakfast	17	times,
after breakfast and dinner . . .	25	..
alkaline, before breakfast . . .	24	..
after breakfast and dinner . .	15	..
neutral, before breakfast . . .	9	..
after breakfast	10	..

From another series of experiments, Dr. Van Setten concludes that,
in persons whose saliva is acid before breakfast, that fluid becomes alka-
line during the process of eating, and after breakfast reassumes its acid
reaction.   In conjunction with Professor Sebastian, he made a number
of trials which demonstrated, in confirmation of the assertions of Leuchs,
Schwann, and others, the peculiar chemical action of the saliva on fecula.

PART THIRD.

Selections from the British and Foreign Journals.

I. THE FOREIGN JOURNALS.

ANATOMY AND PHYSIOLOGY.

On the Structure and Functions of tho Cerebral Nerves of the Frog.
By Professor VOLKMANN, of Dorpat.

[THIS article notices not only the origin and functions of the cerebral nerves, but describes likewise in great detail their course, and the muscles which they supply. Our extracts shall be confined to the first two heads.]

I. *On the Origin of the Nerves.* Only eight separate nerves arise from the brain of the frog; as the facial, glossopharyngeal, accessory, and hypoglossus are supplied by branches from other nerves. The facial is a branch of the auditory; the ninth and eleventh pairs are contained in the tenth; and the first cervical nerve supplies the place of the hypoglossus. The motor oculi arises from the crus cerebri behind the tuber cinereum to which the pituitary gland is attached. The nerve runs outwards and forwards and passes behind the optic nerve through a cartilaginous plate, which represents the great wing of the sphenoid bone. The pathetic arises from the posterior and upper border of the corpora quadrigemina, passes outwards and downwards, and traverses the cartilaginous plate of the sphenoid, a little way above the foramen of the motor oculi. The trigeminus arises from the external border of the medulla oblongata, it runs forwards and outwards, and traverses the bony portion of the sphenoid, forming, in the foramen through which it passes, a reddish ganglion, which receives several nerves. The abducens takes its origin from the anterior fissure of the medulla oblongata and ends in the ganglion of the trigeminus. The auditory nerve arises immediately posterior to the abducens, and soon divides into two branches, one of which passes into the ganglion of the fifth. The pneumogastric nerve arises from the outer edge of the medulla oblongata, posterior to the auditory nerve, and receives some nervous fibres which appear to represent the glossopharyngeal. It is not joined by any fibres which can be supposed to represent the accessory of Willis.

II. *On the Functions of the Nerves.* The motor oculi, judging from its course, is a mixed nerve, and endows the muscles which it supplies alike with motion and sensation. It is distributed to all the muscles of the eye except two, and as a voluntary muscle cannot be supposed to be without sensation, seeing that this quality regulates the degree and direction of the motion, it must in consequence be admitted that the motor nerve of the muscles of the eyeball contains also sensory fibres. On irritating the motor oculi of a recently killed frog, within the cavity of the skull a variety of motions were induced; the eyeball was turned in various directions, and rolled as if by the action of the inferior oblique. On preparing the parts so as to bring several of the muscles into view, and again irritating the nerve, spasmodic twitches were observed in several of the recti, but no effect was produced in the superior oblique, in the external rectus, or in the suspensorius muscle.

The pathetic nerve of the frog, regarded in an anatomical point of view, must be considered as purely motor. On irritating the root of the nerve a motion of the eyeball is produced, which from its nature must be dependent on the action of the superior oblique; and when the parts are prepared so as to show the muscles, and the nerve is then irritated, the convulsions are seen confined to that muscle.

Division of the pathetic, before it unites with the nasal nerve, does not seem to cause the animal pain, but it should be remembered that frogs when tormented occasionally suppress the expression of pain. It is more difficult to determine by experiment the function of the sixth pair, as its fibres traverse the ganglion of the trigeminus. On irritating its root the eyeball was drawn violently inwards, and was covered by the membrana nictitans, or in some instances it was turned backwards. On displaying the muscles of the eye and then applying irritation to the nerve, contraction of the fibres of the rectus externus and suspensorius was distinctly observed; and on dividing, in another frog, the third and fourth pairs, and irritating the medulla oblongata with a needle, the eyes were violently drawn back into their sockets, and covered by the membrana nictitans. They remained shut a considerable time, and then suddenly opened, the eyeballs being drawn forwards and the membrana nictitans downwards. The irritation reapplied reproduced the above phenomena. In another frog the sixth pair of both sides was divided, and the motor oculi and the pathetic were then irritated. The eyeballs were in consequence slightly moved, but they were never withdrawn into their sockets, nor were they covered by the membrana nictitans. Dr. Volkmann therefore considers the abducens as the most important motor nerve of the eyes; it is much thinner than the motor oculi, but this depends upon the latter being a mixed nerve and including sensory fibres, whilst the former is purely motor.

The trigeminus is a mixed nerve, and supplies both integument and muscle. Irritation of its root produces contraction of the mental and temporal, of the mylohyoid and nasal muscles, but no motion of the muscles of the eyeball.

On irritating the facial nerve within the cavity of the skull, convulsions of the vertebro-maxillaris and tympano-maxillaris were produced, and on applying the stimulus of galvanism, not only these muscles were affected, but also the stylohyoideus anterior, and in the male in the muscular sac of the larynx, or in the female the slender muscular fibres of the pharynx.

The nervus vagus is a mixed nerve, formed from the union of the ninth, tenth, and eleventh pairs. Irritation of its root within the cavity of the skull produced convulsions in the levator scapulæ inferioris, the stylohyoideus posterior, the stylopharyngeus, and the muscles of the larynx. The glossopharyngeal branch was divided, but irritation of its extremity produced no convulsions in the muscles which it supplies; it is therefore considered as purely a sensory nerve. The ramus recurrens is a motor branch; irritation of it caused convulsions in various parts of the larynx; in particular the glottis was drawn to the side of the irritated nerve, and would unquestionably have opened had the opposite side been fixed and not yielded mechanically to the contraction of the irritated muscles. The influence of the vagus upon the motions of the heart is very peculiar. The brain and spinal cord of a frog were destroyed, and the anterior extremities and sternum carefully removed, so as to expose the trunk of the nerve. About a quarter of an hour after the death of the animal, galvanic stimulus was applied to the vagus by means of eight pairs of four inch square plates, at the same time constantly breaking and reconnecting the chain. Immediately before the experiment, the heart was beating thirty strokes a minute; in the second minute after application of the stimulus, it beat thirty-three strokes, and continued to do so during the third, fourth, and fifth minutes, when the experiment was interrupted. Three quarters of an hour after death the heart was beating twenty-nine strokes a minute; the galvanic stimulus was reapplied and in the second minute afterwards it beat only eleven strokes, in the third thirty-one, and in the fourth thirty-four. The small number of strokes during the second minute appeared to be owing to intermission. The experiment was repeated two hours after death, when the heart was beating twenty-nine strokes in the minute. During the second minute after application of the galvanism the number of beats was twenty-six, and during the third only sixteen. The difference was owing to intermission; the strokes followed at regular intervals till an intermission of perhaps nearly half a minute occurred, and then they again followed in regular succession. Irritation of the vagus likewise augmented the peristaltic motions of the stomach and bowels. The first cervical nerve is also a mixed

nerve, and irritation of its root produces convulsions in the muscles which it supplies.

[The above sketch is necessarily very imperfect, as we have been obliged to omit many anatomical details, the knowledge of which would have removed several obscurities.   For their solution we must refer the reader to the original paper.]

Müller's Archiv.   1838.   Heft i.

Anatomical Researches into the Comparative Structure of the Cutaneous and Mucous Membrane.   By M. FLOURENS.

IN the skin of the European, the dermis is covered by two layers of epidermis, the one internal and the other external; in the black or coloured races there is, beneath these two membranes, an organ for the secretion of colouring matter.   In the tongue, whether of man or of quadrupeds, there exists between the dermis and epidermis a peculiar body, called mucous body corpus mucosum.)   This body which appeared to Malpighi, who obtained it by boiling, to be reticulated, is proved by the more exact process of maceration, to be continuous and membranous; of the two layers of epidermis in the skin of the European, the internal is the most coloured; in the tongue the mucous body is the seat of all partial discolorations. The mamma, in the human species, is surrounded by an areola or circle of a lighter or darker brown, or bister-colour.   This colour is proved by careful maceration to be due to the internal epidermis, which is of a deep brown; but when seen through the external layer has a light grayish aspect.   In the skin, then, of the European, the second or internal epidermis is the seat of colour.   In every part of the body this membrane is more coloured than the external layer, it is the seat, as we have seen, of the discoloration of the nipple; it is upon this too that the sun produces its tanning effect.   The dermis is the seat only of freckles, and other minute discolorations.   The tongue may be taken as the type of an entire group of mucous membranes; externally it is covered by the epidermis, beneath the epidermis lies the mucous body, and beneath this again the dermis with its papillæ.   The mucous body which exists in the tongue and which is found also on the palate, cheeks, and throughout the entire cavity of the mouth, extends still farther throughout the œsophagus.   At the point where the œsophagus terminates and the stomach begins, an entirely different structure, which will form a subject for future enquiry, commences.

The characters of the mucous body are everywhere the same.   In man it is white, in the ox it is the seat of those partial discolorations which are so often seen upon the palate and tongue of that animal.   Its tissue is peculiar; it is rendered more compact, and, when its colour is white, becomes more white by boiling.   It consists of layers superimposed and adherent.   The second or internal epidermis is very thin and fine; it is covered in the areola of the nipple by a more or less distinct layer of pigmentum, and readily passes to a diffluent state.   There is no doubt that the fable of a mucous membrane belonging to the skin took its rise from this state of the internal epidermis.   This membrane can be obtained only by a certain degree of maceration; if the process is not carried on long enough it is detached with the external epidermis, if it is pushed too far, the membrane is dissolved away.   Between these two degrees of maceration there is a point at which the internal epidermis is separated as a continuous and distinct layer.   Those anatomists who have not continued the maceration long enough have denied the existence of a mucous membrane; those who have pushed the process too far have spoken of a mucous body, of a species of mucosity, or of a mucous and gelatinous liquid, (Meckel).   Maceration, properly conducted, demonstrates, in place of this mucosity, a *bonâ fide* membrane, thin, and coloured—the internal epidermis.

The internal epidermis and the mucous body then are two distinct tissues, the former being to the skin what the latter is to the group of mucous membranes of which we are speaking.   It is important to determine the precise point at which the one terminates and the other begins.   If we examine the lips carefully, we trace a distinct continuity, on the one hand, between the external epidermis of the

skin and the epidermis of the mucous membrane; on the other, between the dermis of the skin and that of the mucous membrane; but at the line which separates the pale from the coloured part of the lip, the mucous body takes the place of the internal epidermis.

The mucous membrane which covers the tongue extends, in the ox, over the entire cavity of the mouth, throughout the œsophagus, and over the three first stomachs; in the horse, it terminates in the stomach itself. The structure of this membrane varies somewhat in the several parts which it covers. It is thinner on the cheeks than on the tongue. Near the lips it is furnished with numerous long papillæ. Each of these papillæ is surrounded by two sheaths, the one furnished by the epidermis, the other by the mucous body. The same structure prevails in the palate, the dermis of which is arranged in transverse lines bristling with papillæ. The mucous body, which is the seat of all discolorations, is composed of layers superimposed and adherent, and these layers again consist of perpendicular *blades*. The mucous membrane of the œsophagus and of the three first stomachs of the ox closely resembles that of the tongue and mouth. The papillæ, though differing in shape and arrangement in the several parts, are everywhere covered by two sheaths derived from the mucous body and from the epidermis. After sufficient maceration these sheaths may be detached from the papillæ like the fingers of a glove. The mucous membrane of the horse differs but little from that of the ox. On the palate we observe the same transverse lines, but without papillæ. It covers a part of the stomach and exactly resembles the lining membrane of the three first stomachs of the ruminantia.

In the horse, then, as well as in the ox, there exists an entire group of mucous membranes precisely similar to the membrane covering the tongue. In the one, as in the other, this membrane lines the entire cavity of the mouth. In the horse, it extends also through the œsophagus and first part of the stomach, in the ox through the œsophagus and three first stomachs.

Gaz. Méd. de Paris.   Mars, 1838.

On the Cicatrization of Tendons.   By M. Bouvier.

M. Bouvier has been lately engaged in making experiments on this subject; and he exhibited some of the results at a recent meeting of the French Academy. His experiments went to ascertain, 1, how far the divided ends of a tendon may be separated from one another, immediately after their division, so as not to prevent their reunion by an intermediate tissue; 2, in what degree the new tissue approaches to that of true tendinous matter. The tendinous cicatrices presented to the Academy were taken, 1, from a horse, two months before it was killed, and consisted of a perforating tendon of one of the anterior extremities; 2, from a dog, which was killed six months after the division of the extensor tendon of the foot. Each of these cicatrices was about two inches and a half in length. That of the horse consisted of a grayish, compact tissue, consisting of irregular fibres not very conspicuous, contrasting with the pearly appearance of the true tendon. The cicatrix of the dog consisted of longitudinal fibres, more delicate than those of the tendon, and arranged differently, being also very distinct from these.

Bulletin de l'Academie de Médecine.   No. xvi.   1838

On the Venous Circle of the Mammary Areola.   By Professor Sebastian.

In dissecting the mammæ, Professor Sebastian had frequently observed a filament beneath the areola, apparently describing a circle round it; but being unable to procure the gland of a woman giving suck, he for a long while deferred the investigation of its nature. However, by boiling an empty mammæ for twenty-four hours, the close cellular tissue of the organ was so effectually loosened, that an excellent substitute for the full gland was obtained. By examining it he satisfied himself that underneath the skin of the female areola a circle exists, which usually surrounds the greatest part of the base of the nipple at the distance of a line and a

half from it.   In some cases instead of being circular it is angular, its angles giving origin to branches running towards the circumference of the areola; other smaller twigs ascend from it into the nipple itself.   Its vascular and venous nature was proved by injection.   The circle exists in the male also, though in him it exhibits a somewhat different form.   This anatomical fact has altogether escaped the notice of modern observers, at least no mention is made of it by Meckel, Cloquet, Weber, Lenhossek, &c.   The indefatigable Haller, however, distinctly described it in his Elements of Physiology, vol. vii. sect. 1.   Sebastian proposes in consequence that it be called Haller's circle.   As to its use, he believes that it has much to do with the erection of the nipple.   Hitherto that part of the breast has been referred to the class of erectile tissues, more on account of its exhibiting the phenomenon of erection, than from anatomical demonstration of its structure.   But when the venous circle becomes turgid from being filled with blood, and at the same time the veinules forming communications between it and the nipple are filled, the whole apparatus must push up and cause the erection of the nipple.

Tijdschrift voor Natuurlijke Geschiedenis.   11 Deel, 3 Stuk.

On accessory Supra-Renal Capsules.   By Professor SEBASTIAN.

IN the body of a woman who died of general dropsy, with tubercular disorganization of the kidney, I discovered, attached to one of the supra-renal capsules, corpuscula of a different shape from that of the capsule itself, not more than a line and a half broad, but of the same colour and structure as that organ.   There were evident fibres in the cortical substance and internally a distinct cavity.   These characters justify me in considering the bodies described as supernumerary capsules.   They could scarcely be looked on as lobes of the principal gland, as they were only united to it by loose cellular membrane.   I never felt persuaded of the close relation of the supra-renal capsules to the lymphatic, but have always felt inclined to refer its function to the vascular system.   To me the vein issuing from it appears to fill the office of an excretory duct, and to convey either a material secreted from the arterial blood, or that fluid itself modified in its properties, and destined for the improvement of the venous blood.   The great size of the organs in the foetus is thus accounted for, as also the peculiar disposition of the vein itself, which is such that by it the whole gland is easily distended.   Thus too is explained the fact, that in diseases of the venous system these glands are not unfrequently found either increased in bulk or otherwise unhealthy.   According to this view, therefore, the capsules would act the part of a placenta.   I have not discovered any distinction between the globules of the supra-renal and renal veins.

Tydsch. voor Natuurl. Gesch.   3 *Deel.*

PATHOLOGY, PRACTICAL MEDICINE, AND THERAPEUTICS.

On Simple Chronic Ulcer of the Stomach.   By M. CRUVEILHIER.

THE researches of M. Cruveilhier on the pathological anatomy of the stomach, lead him to conclude that there exists occasionally simple chronic ulceration of that organ, essentially different from cancerous ulceration of the stomach, but often presenting similar symptoms.   There is indeed no pathognomic symptom which will enable us generally to distinguish the two diseases with precision, although there are circumstances which will guide our diagnosis.   The natural termination of the two diseases differs essentially; as, whilst cancer of the stomach has an inevitably fatal tendency, simple chronic ulcer will often heal under a soothing treatment, and after a careful abstraction of all irritants.   Yet this disease will sometimes terminate fatally by causing perforation of the stomach, or excessive hemorrhage; and even when the ulcer has healed, it will leave permanent ill consequences in some

cases, producing a contraction of the stomach unfavorable to the passage of food, or attacking the coats of the arterial trunks which lie beneath the cicatrix.

1. Simple chronic ulcer of the stomach consists in a spontaneous loss of substance, generally circular, with sharp borders, dense and gray at the bottom, and of variable dimensions. There is rarely more than one, and this is situated in the small curvature or posterior part of the stomach. When it attacks the pylorus, it assumes the form of a zone. Its progress is slow, and as it extends in surface it increases in depth.

2. This kind of ulceration presents the same characters as cutaneous ulcers produced by a constitutional or local cause. It frequently resembles a syphilitic ulcer, but there is no ground for attributing to it a syphilitic origin.

3. Simple ulcer of the stomach may be distinguished from cancer by the absence of the hypertrophied and hardened base which accompanies scirrhous ulceration.

4. All the causes of gastritis are capable of producing simple ulcer of the stomach; but it is not uncommon to find this lesion in the bodies of persons who, during life, presented no symptom of it whatever. More generally, however, symptoms similar to those of scirrhus characterize it. Thus there is a failing or capricious appetite, insurmountable lowness of spirits, pain at the epigastrium increased during digestion. This pain frequently extends to the corresponding portion of the vertebral column, where it is felt with greater intensity than anteriorly. Emaciation, constipation, nausea, and vomiting of food, as well as vomiting of blood or a black matter, present a train of symptoms so similar to those of cancer, that it is only the experience of the effects of remedies which enables us to pronounce on the exact nature of the disease. It may, perhaps, be said that in cases of simple ulcer the patient is not so completely weighed down by the symptoms as in scirrhus.

5. If we examine the surface of the ulcer under water by the aid of a good magnifier, or even with the naked eye, we see a number of vascular orifices, some obliterated, others still open. It is from these orifices that the blood is poured out which sometimes produces alarming hæmatemesis. The black, sooty colour of the vomited matter arises from blood which has remained some time in the stomach, and has undergone the action of the gastric juice. When the ulceration attacks a vessel of considerable size, a quantity of blood may be poured into the stomach and bowels, the loss of which is sufficient to cause death. This termination is more frequent in simple ulcer than in cancer. Sometimes indeed the ulcer is completely cicatrized in every point except that which corresponds to a perforated vessel. In this case, the giving way of the coagulum may produce a fatal hemorrhage.

6. An absolute diagnosis between this disease and cancer is of the less consequence, because the treatment should be nearly the same. Repose of the stomach, as complete as the supply of the absolute wants of nature will allow, is essentially necessary. It is impossible to say beforehand what diet the ulcerated organ will bear; this must be determined in each case by careful experiment. Some will bear fish or white meat; others, veal or chicken-broth; whilst others will endure merely water containing sugar or gum in solution, or even simple water. The treatment should be commenced by enjoining on the patient complete abstinence even from liquids for twenty-four hours. If there is pain at the epigastrium, leeches should be applied, and should be followed by a bath. The day after, a milk diet should be tried. A few spoonfuls of new milk taken occasionally will often suffice and agree well with the patient; if this is not the case, recourse must be had to gelatinous or farinaceous food, and the desires of the patient must be consulted. His natural instinct will often guide us to the discovery of the most proper aliment. Calcined magnesia is occasionally useful; opium rarely: sugar is in general injurious. Baths of gelatine are a very powerful auxiliary, and are much more useful, when they are continued during a space of two, three, or four hours. In this, as in many other chronic affections, it is important not to prolong the system of abstinence too far. Occasionally a change to more stimulating food, as game, will be of service. It is in the details of such a case that there is most room for the

exercise of the sagacity of the practitioner. Quality and quantity of aliment; number and period of meals; temperature; period of exercise; excretions; all these points require the minute attention of the physician, and it is by attending to them, rather than by the action of medicines, that we may hope for the best results.

The cicatrices of the ulcers are all fibrous, very resistent, and consequently fragile. It is erroneous to state, that the losses of substance of mucous membranes are replaced by an accidental mucous tissue: a fibrous tissue not covered with a mucous layer replaces the portion of destroyed stomach. Recovery from ulceration, by no means renders the patient less exposed to perforation and hemorrhage.

The cicatrization of losses of substance of the stomach, similar to the same process occurring in the skin, is performed in two ways: 1, by the drawing together of the edge of the wound; 2, by the production of a fibrous tissue. Inconsiderable losses of substance are cured exclusively by the first method, and then the cicatrix of the stomach is represented by a linear stroke or by a small depression, with circular puckering and radiated folds. More considerable losses of substance leave a circular depression, as if made by a punch, which has a fibrous bottom, limited by a border of mucous membrane, more or less projecting.

Perforations may happen during the period of improvement of the ulceration, when the necessary adhesions are not established, and then it may be the result, 1st, of a new ulceration, which may occur on the very bottom of the cicatrization, or upon a point of its circumference; 2dly, from a default of extensibility, from the fragility of the cicatrix, which is broken in consequence of distension of the stomach, either by gas or by aliments, or from violent vomiting.

Hemorrhage may take place: 1st, during the period of increase of the ulcer; it is then the result of erosion of the arterial walls; 2dly, after the cicatrization, and then sometimes it is produced by the fall of an obstructing clot; sometimes it is in consequence of an ulceration which invades a portion of the cicatrix, or a process of erosion limited to a vessel.

Death is the certain and inevitable consequence of perforation. The hemorrhage may be either rapidly fatal, or the patient may sink from a succession of attacks. The blood is generally passed by vomiting, it is often passed both by vomiting and by stools. In some cases altogether by the stools which are like ink: in these cases it is probable that the blood is furnished in small quantities, and is in some measure digested.

Those patients who have been cured of this disease are prone to a return from the slightest causes. M. Cruveilhier has seen it reproduced in the same patient three times, at intervals of from two to four years. The knowledge of a patient having recovered from such an attack, should indicate great caution in the employment of irritating medicines. Two cases are given: we select the last, because it clearly points out the importance of bearing in mind this important observation.

A female, aged sixty, entered the hospital on the 23d of September, 1834, for a prolapsus of the rectum. The attention being directed to this point only, the remedies for such an affection only were ordered. Some days after, upon the patient complaining of a bad taste and of habitual constipation, she was ordered twenty-four grains of ipecacuanha with relief. On the following day, she complained that her food produced a very painful sensation in the epigastric region, and it was at this period she gave the history of her case. She had been seized eighteen months before with vomiting, pains in the stomach, and fever. The vomiting was produced by the ingestion of food, and occurred from time to time, accompanied with epigastric pains; these were so violent as to give the sensation of an animal in the stomach. Pressure upon the epigastric region caused a very acute pain, but no tumour could be discovered. Cataplasms and milk diet were ordered. On the 4th of October, she was suddenly seized with an acute abdominal pain, agitation, and anguish. The following morning there were a distressed and discoloured countenance, miserable pulse, cold perspiration, acute sensibility of

the abdomen; more especially of the epigastrium and the left hypochondrium, nausea and hiccup. M. C. diagnosticated a perforation of the stomach: fifteen leeches and cataplasms were applied, but the patient died during the night.

Dissection. The intestines were injected and covered with a yellow, false membrane, mixed with bile and alimentary matter. The pelvis contained several ounces of a turbid serum, in which were several seeds and skins of grapes. The intestines were united together. The stomach presented in front, very near the great curvature, not far from the pylorus, a round perforation, about two lines in diameter. The stomach when opened presented, on a level with this perforation, a recent ulceration of an oval form. Independently of this recent ulceration there existed upon the posterior wall, on a level with the pancreas, a cicatrix formed by this organ, but covered by a layer of smooth fibrous tissue. The mucous membrane formed a circular pad, but it was in a manner continuous with the tissue of the cicatrix. M. C. believes that the irritating nature of the emetic caused the return of the disease.

Many other cases are related, illustrating the termination of this disease. Four cases are detailed in which the stomach was perforated by the ulceration; its contents escaped into the cavity of the abdomen and death ensued in a few hours. Two cases are given in which the disease terminated by fatal hæmatemesis; in one, the coronary artery, in the other the splenic, was the vessel attacked. In both cases the ulcers had cicatrized, except at the points corresponding to the vessels from which the hemorrhage proceeded, and to a small extent around these points. Three cases are given in which examination after death showed the existence of cicatrized ulcers in the stomach of persons, who at a former period had suffered from symptoms of gastritis. Such was the case of Professor Beclard. In one case, death was produced by excessive hemorrhage from the stomach, but on inspection no open vessel was found, and the extreme development of the superficial veins supported the idea that the hemorrhage had taken place by exhalation.

[We had marked for extract, as the best possible commentary on this paper—or rather as its complement—the admirable essay on the same subject, by Mr. Langston Parker, published in the October Number of the Medico-Chirurgical Review: we regret, however, that the pressure of other valuable matter, less accessible to the English reader, obliges us to content ourselves with referring the reader to it. It will repay the most careful perusal.]

<div align="right">*Revue Médicale. February, March, and July,* 1838.</div>

On the Miliary or Sweating Fever (*Suette Miliaire*), Epidemic at Vesoul (*France*) in the months of March and April, 1837. By F. PRATBERNON.

M. PRATBERNON considers this disease, which he has described as occurring epidemically at Vesoul, as a specific affection characterized by very marked symptoms, and closely agreeing in its characters with the epidemics which have at different times ravaged Europe, particularly in the fifteenth and sixteenth centuries, and which were named from their most prominent symptom the sweating sickness. He says that this frightful disease is by no means of rare occurrence in that portion of the department of the Upper Soane which extends from the foot of the Vosges to the capital, Vesoul; he has met with many cases during the last five years. It generally occurred at the end of the winter, killing most of those whom it attacked with the rapidity of the plague. Between the 4th and the 27th of March, 1837, fifty adults were attacked out of a population of 6,000; twenty of these died, some in less than a day. By the common people, the disease was called *the purples.* It generally commenced with a feeling of languor and general feverishness, accompanied sometimes with catarrhal symptoms: after a few days the fever became violent; the pulse was quick, small, and soft; the countenance anxious; the skin hot and red at first, and soon covered with profuse sweating, the perspiration rising like smoke or vapour from all parts of the body, and penetrating the bed clothes; it possessed a peculiar sour smell at first, and afterwards became very fætid, its odour being compared to that of rotten straw. Generally about the third

day an eruption of small, red papillæ broke out, which became vesicular : the vesicles contained at first a serous fluid, which afterwards turned purulent; they lastly dried up and formed scales which were detached with the cuticle during convalescence.   The sweating became less abundant after the appearance of the eruption. Sometimes the eruption was partial, and irregular in its appearance and continuance.   The eruptive stage was that of the greatest danger.   There was generally a feeling of oppression at the chest and pit of the stomach, with palpitation of the heart, and a great dread and presentiment of death.   M. Pratbernon remarked that the symptoms had a deceitful mildness, till within a short time of death; they then became suddenly much aggravated, the breathing was greatly oppressed, the trachea seemed obstructed with frothy mucus, and the patient died as if asphyxiated.

Putrefaction took place so rapidly after death even in the coldest weather, that it was found mostly impossible to make any examination of the body.   M. Pratbernon relates five cases, three of which were fatal, and in two of which a careful post-mortem investigation was made soon after death, but no peculiar lesions were met with; the lungs were gorged with blood, and the mucous membrane of the trachea and bronchi was deeply injected.   The vessels of the brain were also gorged, and there was a considerable effusion of serum between the membranes of the brain, and into the spinal canal.   The blood was in a fluid, dissolved state.

With respect to the *causes* and *treatment* of this disease, neither of them seem much understood; the latter was varied according to the circumstances of the case: the most successful plan seemed to be to keep the patient moderately warm, and give mild acidulated drinks; an emetic appeared sometimes to do good in the early stages, and sulphate of quinine produced beneficial effects towards the termination of the case.   Much obscurity hangs over the source or mode of origin of this, as well as many other diseases.   It seemed to be epidemic, or rather endemic, for it was confined to certain restricted localities.   By some it was considered as contagious; though this opinion was contrary to the evidence of facts, for the disease was frequently confined to one individual in a family.   On the other hand, it could not be traced to the influence of marsh miasmata, for it often appeared in dry situations, as paved towns, while low, swampy villages escaped.   The source of the disease seemed, however, very confined in its range, and M. Pratbernon thought it was owing to some local or domestic causes.   He suspected that it might arise from putrid exhalations engendered by the common people living together in crowded situations, and being in the custom of sleeping between two beds made with soiled greasy feathers, procured from numerous wild-fowl with which the country abounds.   This sweating fever generally attacked people in the prime of life, avoiding children and old persons, and it is stated that three times more females than males fell victims to it; newly-confined women seemed particularly obnoxious to its influence.

Revue Médicale française et étrangère.   August, 1838.

On the Exhibition of Hydriodate of Potash in secondary Syphilis, Scrofula, &c. By Dr. VON HASELBERG.

[THE following cases are related as corroborative of Wallace's views of the efficacy of hydriodate of potash in secondary syphilis; but we are inclined to think that sufficient time was not allowed in most of the cases to warrant the patient being considered secure against a relapse.]

CASE I.   A woman, aged sixty-three, was affected with small itching ulcers on the vagina and neighbouring parts, with numerous copper-coloured patches on various parts of the body, and with difficulty of deglutition and pain and swelling in the throat.   Corrosive sublimate was exhibited, and between the 29th August and 3d October she took sixteen grains of the salt.   Under its use the ulcers on the genital organs and the maculæ on the body disappeared; but the redness and

swelling of the throat increased, and ulcers formed on the tonsils. Recourse was now had to the hydriodate of potash, and a table-spoonful of a solution, containing eight grains to four ounces of water, gradually increased to double the strength, was exhibited three or four times daily. Improvement was manifest before half a drachm of the salt had been taken, and eighty grains were sufficient to procure the cicatrization of the ulcers. Its use was now discontinued, but in a few weeks the pain in the throat returned: its exhibition was therefore again resumed, and continued with slight interruptions, which were always followed by an increase of the disease of the throat, for about two and a half months, when all trace of the disease in the throat was removed. The patient died three months afterwards from apoplexy, without a relapse having taken place.

CASE II. In 1816 Mr. C. contracted a gonorrhœa, for which he was salivated; and in 1819 he was affected with syphilis, and again took mercury. In 1834 he applied to Dr. Haselberg on account of a painful periostosis on the right clavicle, accompanied by pains in the shoulder-joints and in the neck and head. Dzondi's mercurial treatment was then commenced; but the extreme weakness of the patient, and the early appearance of salivation, prevented it from being fully carried through. The tumour on the clavicle was greatly diminished, but most agonizing pains continued to affect the whole osseous system. This state continued in spite of the use of a great variety of remedies for about two years, the patient steadfastly refusing to submit again to mercurial treatment. In the autumn of 1836, the pains in the skull became, if possible, still more severe, and the periosteum of the frontal bone began to press upon the eyeball. The exhibition of hydriodate of potash was now resolved upon, and its use was accordingly commenced on the 9th of November. On the 3d of December the patient expressed himself much relieved, and the amendment continued till the 20th, when the use of the hydriodate was interrupted; one ounce and a half having been taken. Its exhibition was recommenced in January, as the pains returned with as great intensity as ever; and on the 4th of March three ounces additional had been taken, with almost complete relief. It was again interrupted, and in fourteen days the pains were as violent as ever. Calomel and opium, in minute doses, were now administered, but almost immediately stopped, as salivation ensued. On the 4th of May the hydriodate was again given; and on the 20th of June three ounces additional had been consumed, with great benefit to the patient. The use of the salt was now desisted from, and, on the 27th of September, the patient still continued in excellent health, and free from all pain.

CASE III. On the 10th October, 1835, a gentleman became aware of a small chancre on the prepuce, which at first was treated on the anti-mercurial plan; but calomel was afterwards exhibited till the gums were slightly touched. On the 4th November the health was considered as reestablished; but on the 16th December he complained of redness and pain in the tonsils, symptoms which were speedily followed by ulceration. The patient was treated by mercury between the 22d December and 21st January, and the symptoms were removed; but on the 15th of February the ulcers reappeared upon the tonsils. The red precipitate was now exhibited, and on the 17th of March the ulcers had cicatrized; twenty-eight grains of the oxide having been taken. The patient now continued in good health till the 3d of August, 1837, (sixteen months after his apparent cure,) when an ulcer appeared upon the right tonsil. The hydriodate of potash was exhibited upon the 5th of August, and its use continued till the 20th of September; when the patient was considered not only as completely restored, but as safe against relapse.

[Several other cases are detailed, in which the hydriodate acted beneficially for a time at least; but, as the history of the patient is not continued beyond the period at which the exhibition of the salt is stopped, it is impossible to say whether the benefit proved lasting or merely temporary: we think it needless, therefore, to give them here.]

Medicinische Zeitung. 1837. Nos. 48 and 49.

Two Cases of Facial Paralysis. By Dr. C. J. Heidler, of Marienbad.

[The two following cases are related as evidence of the efficacy of emetics in removing paralysis of the facial nerve.]

A man, æt. 44, of rather feeble constitution, complained of a feeling of fulness in the head after a morning of rather severe study. In the afternoon, during an excursion to the country, he exposed himself to cold, and on his return home became aware of a slight difficulty of rounding the mouth in spitting. This symptom gradually increased till the case assumed the aspect of a mild form of paralysis of one side of the face. There was still slight congestion of the brain, and the whole vascular system was a little excited. The tongue was affected only in a slight degree. The diagnosis was—a congested, or perhaps an inflammatory state of the root or trunk of the facial nerve. Venesection of twelve ounces, a blister to the nape of the neck, cold applications to the head, and an emetic. The only immediate consequence of these remedies was the partial relief of the congestion of the head. The patient passed a good night; but on the second day the paralysis seemed to have increased rather than to have diminished: leeches were, in consequence, applied behind the ears and to the nape of the neck, and sinapisms to the feet; the cold applications to the head were continued. In the afternoon a blister was applied behind the ear; the back and the calves of the leg were dry-cupped, and a drastic purgative prescribed; but these measures failed in producing any apparent diminution of the paralysis. On the afternoon of the third day, another venesection of ten ounces was made, in consequence of a return of the symptoms of cerebral congestion; ice was kept applied to the head, and in the evening an emetic was administered. This was followed in some hours by a sensible diminution of the paralysis and the disappearance of the cerebral fulness. On the fourth day warm cataplasms were applied to the affected cheek; but cold applications to the head were repeatedly substituted, when the symptoms of congestion threatened to appear. On the fifth day there was again slight congestion, for which leeches were applied, and an emetic given in the evening, but without in any degree removing the paralysis. On the sixth and seventh days the warm cataplasms were occasionally applied, and another emetic was administered in the forenoon of the latter day, which produced copious vomiting. In the evening the patient regained some power over the affected muscles, and during the two following days it continued to increase; the warm cataplasms being occasionally applied. On the eleventh day another emetic was ordered, which produced still further diminution of the paralysis, which eight days sufficed to remove entirely.

Case II. A woman, æt. 40, of weak constitution, was affected with violent inflammation of the left ear, which apparently extended to the brain and corresponding facial nerve, leaving, after its removal, a total paralysis of the muscles of this side of the face. Four weeks after the inflammation had ceased, all the branches of the facial nerve, but particularly its trunk immediately after its exit from the cranium, still showed considerable sensibility on pressure. The brain was affected in a slight degree, and the whole of the left side of the head felt tight and uncomfortable. The commissure of the mouth and the eyeball were nearly immoveable, and considerable difficulty was experienced in moving the eyelids, which during sleep remained half open. The intellect was slightly affected, and a feeling of numbness in the hand and foot of the affected side gave rise to suspicions of threatening apoplexy. Such was the state of the patient in the sixth week after removal of the inflammation, notwithstanding the energetic employment of counter-irritation and other remedies. A slight indigestion was at this period the cause of an emetic being administered, which had the effect of producing a sensible diminution of the paralysis. The patient made no further advance towards recovery during the next eight days: a second emetic was then exhibited, which was followed by a similar diminution of the symptoms. Seven emetics were thus successively given at longer or shorter intervals, with the final result of removing completely the paralytic affection.

Rust's Magazin. Band xlix. Heft 2.

Accidental Development of a Canal filled with Serum in the centre of the Spinal Cord. By M. Monat.

The following is the history of a curious case in which a multilocular canal filled with a limpid serum was discovered in the spinal cord, communicating with the fourth ventricle, by means of the *calamus scriptorius.*

A man, aged thirty-four, experienced, in October 1835, a pain in the inferior and posterior part of the neck, analogous to rheumatism; it afterwards left the cervical region and attacked the dorsal, producing cramps of the inferior extremities, with diminution of motion and increase of sensibility. Some time after, atony of the rectum and bladder was manifested, and after some months a complete paraplegia with œdema of the inferior extremities, sloughs upon the sacrum, &c. Nothing abnormal was observed in the intellectual manifestations, in the organs of the senses, nor in the parts situated above the umbilicus. There was great emaciation.

Such was the state of the patient upon entering the Hôtel Dieu on the 21st of September, 1836. It was supposed to be a case of ramollissement of the spinal cord. On the 2d of October, the respiration became embarrassed, and on the 5th he expired in a comatose state. The spinal cord was generally softened, especially the centre of the superior part which was almost fluid. On a level with the fifth cervical vertebra, in the centre of the cord, there was a cavity, filled with a sanguinolent black matter, mixed with the softened medullary pulp. An incision being made a little below, upon the median line, a transparent serous fluid flowed out, which occupied a sort of canal dug out of the thickness of the cord. It was prolonged as far as the eighth dorsal vertebra, and was interiorly lined by a species of serous tissue. The canal communicated with the fourth ventricle by means of the calamus scriptorius, and was divided into several cells by means of medullary partitions corresponding to each pair of nerves.

M. Monat regards this canal as accidental and not congenital.

<div align="right">*Archives Générales de Médecine.*   March, 1838.</div>

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On the Resistance offered by the Peritoneum to Perforation of the Intestine. By Professor Sebastian.

An appearance illustrating this resistance in a remarkable manner presented itself in the small intestine of a youth who died of phthisis. There were numerous ulcers of different sizes in the mucous lining of the bowels, and at the same time several small tubercles in the cellular tissue between the muscular and serous coats. At one point a dependant sac formed by the peritoneal coat, and partly filled with bilious pus, was observed. Its interior communicated with the cavity of the intestine, and the muscular and mucous membranes of the latter were destroyed by ulceration to about an inch in extent round the orifice of the sac. This last had evidently been formed by a process of elongation, caused by the pressure of the intestinal contents after the destruction of the two other coats of the bowel. The whole was an accurate imitation of the state of the arterial membranes in Scarpa's aneurism. I am not aware whether in cases of perforated intestine the peritoneum usually yields in the manner described before the rupture. No mention is made of such a fact by authors who have given us cases of perforation; but the peritoneum which had been distended before might have contracted after the rupture.

[Notwithstanding the Professor's suggestion, we still are of opinion that this elongation of the peritoneum must be, at the least, an exceedingly rare phenomenon. Admitting that contraction might take place after the perforation, there must still remain in the dead subject a loose portion of peritoneum corresponding to the pouch, which, had it existed in any of his cases, could not have escaped the vigilant eye of such an observer as Louis; now no such appearance is described by him in his cases of perforated ileum.]

<div align="right">*Tijdsch. voor Natuurl. Geschiedenis.*   3 Deel.</div>

On Disengagement of a Gaseous Fluid in the Circulation, as a cause of Sudden Death.   By Dr. OLLIVIER.

AFTER noticing the common causes of sudden death, such as cerebral and spinal apoplexy, pulmonary apoplexy, and emphysema, rupture of the heart or of the large vessels, Dr. Ollivier asserts that many cases occur in which an examination after death demonstrates no organic lesion, and consequently that the cause of death is by no means apparent or satisfactorily accounted for. The author's object in the present paper is to prove the possibility of a spontaneous development in the blood during life, of a gaseous fluid, which produces instantaneous death by its accumulation in the right cavities of the heart; either as an obstacle purely mechanical to the circulation, if the gas is analogous to atmospheric air; or as a deleterious agent, if, as may be supposed, it is carbonic acid gas which is disengaged. The following is a case which is supposed to support this view.

A young woman died suddenly, at the moment she was endeavouring to get up. Upon examination nothing could be found to account for death, but a considerable dilatation of the right cavities of the heart by a gaseous fluid. She had been suffering for some time from debility which was sensibly increased, without any apparent cause upon the day of her death.

Revue Médicale.   February, 1838.

Case of Congenital Transposition of the Viscera.
By Dr. TONELLI, of Rome.

A MALE infant, born at the full time, and in other respects properly developed, presented the following appearances when seen by the writer, on the third day from the birth. A tumour of oblong shape, resembling a moderate-sized cucumber, was attached to the umbilicus by a peduncle which spread out into a funnel-shaped base, about nine inches in circumference. The tumour itself extended longitudinally from the middle of the sternum half-way down the thighs. [Its longitudinal measurement is not more particularly stated.] It projected in front of the navel five or six inches. Its transverse diameter, opposite the navel, was about six fingers' breadth. The lower portion of its investing membrane was pellucid, yellowish, and evidently contained a fluid. The upper portion resembled the common integuments, and had a soft elastic feel. The navel-string adhered to the right side of the tumour for the space of about four inches. The infant had properly voided its urine and meconium, and had begun to take the breast. It died shortly after this inspection. On the lower part of the cyst being punctured, there flowed out about six ounces of yellowish serum. When the upper part was laid open, all the viscera were found within, arranged in a relative position analogous to that which they would have naturally occupied within the abdomen, with the exception only of the kidneys, bladder, and rectum. On tracing the cardiac extremity of the stomach, it was found to bend upwards, and enter the umbilical opening by the side of the umbilical vessels. In like manner the extremity of the colon was seen to enter the abdomen. The cyst was now removed by cutting through the peduncle, the orifice of which measured two inches and a half in diameter. The abdominal cavity was found rather smaller, and the tendinous attachments of the diaphragm, posteriorly, somewhat lower down than natural. The kidneys and urinary bladder were found in their natural positions, and the stomach and colon were found continuous with the œsophagus and rectum respectively, as was to be expected from the regular performance of the functions of those organs. Dr. Tonelli considers the present case as one not hitherto described. He refers to the case of thoracic hernia recorded by Mr. Morgan, of the Bristol Infirmary, and to the congenital transposition of the viscera in an adult observed at Calcutta, by Mr. Hardy, (see both articles in Medical Gazette, vol. xii. pp. 79 and 673,) but justly remarks that these cases bear no analogy with the present one.

Annali Universali di Medicina.   Vol. lxxxii.   *Aprile, Maggio, Giugno,* 1837.

SURGERY.

On the Removal of the Bones of the Face. By Professor J. F. DIEFFENBACH.

THE attention which modern surgeons have given to remedy or remove the diseases which attack the face has induced Dr. Dieffenbach to give his experience on the subject, in the form of a report of a number of cases in which he had successfully removed portions or the whole of the upper and lower jaw.

The superior maxilla was first removed by Professor Lizars, of Edinburgh. Since his time numerous surgeons, both in Great Britain and on the continent, have performed this operation. In a paper by Mr. Liston, published in the 20th volume of the Medico-Chirurgical Transactions, on this subject, an account is given of those diseases which affect the upper and lower maxilla; and those are distinguished in which an operation may be ventured upon with hopes of success. The diseases are the following: 1. Parulis, or spina ventosa; swellings of an acute or chronic nature, from which there is usually a purulent secretion. 2. Epulis; a solid growth from, and of the consistence of gum. 3. A fungous vascular growth from the apex of the fangs of teeth, which increases gradually, bleeds easily, and beneath which the osseous tissue becomes changed into a soft lardaceous brain-like matter. 4. Osteo sarcoma; a soft, ragged, foul, ulcerated, fungous growth, commencing usually amongst the bones, which it gradually displaces; sometimes bleeding, and always malignant. 5. Tumours of erectile tissue, usually occupying the antrum. 6. Simple fibrous tumours, having a botryoidal form, and slow in growth, attaining a great size, and not malignant.

The parulis and epulis are usually slight affections, involving only small portions of the alveolar process, and which may be easily removed. The fibrous tumours may always be safely removed: they are slow in growth, and not of a malignant character. The other diseases should only be interfered with at an early period, when the neighbouring glands are not affected, and when the whole disease, together with the surrounding healthy parts, may be removed.

Of the cases reported by Dieffenbach, twelve involved only portions of the jaw, and were usually of the nature of the parulis or epulis. Three cases, in which the whole of one of the superior maxillary bones was removed, would appear, from the slowness of their growth, and the size they had attained, to have been of the nature of the fibrous or botryoidal tumours of Mr. Liston. One case of the lardaceous or brain-like affection of the bone was submitted to five different operations before the disease was extirpated. M. Dieffenbach calls one case Fungus malonodes, and which he successfully treated by removal of the superior maxillary bone. A fibrous tumour of the lower jaw was also removed successfully, together with a portion of the bone.

All the cases reported by Dieffenbach had a favorable termination.

[After the first report of fifteen cases of removal of the upper maxillary bone, and of which eleven proved fatal, this operation was unfavorably thought of. But if we keep in mind the rules of diagnosis laid down by Mr. Liston, and consider the termination of the various cases which have been operated on, we may consider this as one of the most successful operations in surgery. Mr. Liston has removed the superior maxilla seven times, with only one case of failure. Dr. Dieffenbach has had five operations, and no failure. Gensoul has removed the superior maxilla four times, with one case of failure; and then the affection was of a malignant nature. Regnoli had one successful case, and one failure. Of the eleven cases operated on by Messrs. Lizars, Syme, Robert, Scott, Earle, Guthrie, and Hetling, only one case was completely successful; but no regard was paid to the malignant or simple nature of the disease.

In the performing of the operation of removing the upper jaw, Dr. Dieffenbach insists much on the necessity of dividing the skin as much as possible in the middle line. This appears objectionable, inasmuch as it would cause much more deformity of the nose. Mr. Liston carries the incision always round the ala of the nose, and thus this organ retains its natural appearance.]

Hamburg Zeitschrift f. d. g. Med. **Feb.** 1838.

Influence of Temperature on the Cicatrization of Wounds.
By MM. Breschet and Guyot.

At the sitting of the Academy of Sciences on the 2d July, a joint memoir was presented by these gentlemen, containing the result of some experiments made at the Hôtel Dieu, on the cicatrization of wounds under the influence of an elevated temperature. For this purpose a hot-air bath was contrived, in which a diseased limb might be exposed to a dry temperature of 36 centigrade (97° F.) A piece of glass inserted in the top of the apparatus enables the progress of cure to be watched without disturbing the limb. Two cases are detailed, in which, immediately after amputation, the stumps were placed in this apparatus. In the first case, in which amputation was performed for scrofulous disease of the femur, no other dressing was applied than five very narrow strips of emplast. plumbi, to approximate the skin without covering the wound, and a roller round the thigh. These slight dressings were removed on the fourth day, when union had taken place except at the inferior portion: here there was a trifling suppuration, which ceased on the fourteenth day after the removal of the ligatures. The superior three fourths of the wound remained dry during the whole process of cure. On the fifteenth day there remained a wound from fifteen to twenty lines in length by only one in breadth. The constitutional state of the patient was most satisfactory throughout. In the second case, that of a man aged sixty-one, amputation was performed on account of suppuration in the ankle-joint. There had been a good deal of constitutional irritation, and the stump was flabby and infiltrated; the tibial artery was ossified. Here union by the first intention was not attempted. Four strips of adhesive plaster were applied, which left a space of eighteen lines between the lips of the wound. For the first five days the wound was covered with a brown scab; on the sixth day suppuration commenced; the appearance of the wound was very favorable; the constitutional symptoms were immediately much ameliorated. This case is not yet terminated; but cicatrization is commencing, and everything leads to expect a favorable result.

Gazette des Hôpitaux.   July 7, 1838.

Curious Case of a Spike of Oat introduced into the Bronchi, and expelled through an Opening in the Walls of the Chest. By M. Stanski.

A young woman, aged twenty, was brought into the Hôpital Cochin, July 16, 1834. It appeared that she had for some time laboured under consumptive symptoms, and that, a fortnight before her admission, she accidentally swallowed (as she thought) an ear of wild oats, in the act of speaking with it in her mouth: she could not tell which end of the spike went down first. She was immediately seized with a violent fit of choking; which, however, soon went off, and was succeeded by continual convulsive coughing. After two or three days she was attacked with pneumonia of the right lung; and, two or three days subsequently, a sudden fit of coughing was followed by an abundant purulent expectoration of very fœtid matter, which continued till the time of her admission into the hospital.   Upon examination, an abscess was detected in the right lumbar region. This abscess was opened by means of caustic, and twelve ounces of purulent matter, resembling that expectorated, was evacuated. Considerable relief of all the symptoms followed this discharge; but cavernous and amphoric respiration, with pectoriloquy, could be heard at the base of the right lung. Subsequently another abscess formed between the ribs, a little below the inferior angle of the scapula; which, after a month, was also opened with caustic. A seton was introduced into the lower opening of the first abscess, and brought out at the newly-made one: by drawing the cotton upwards, the oat-ear was entangled and brought out, broken into two pieces, which together measured three inches in length. After the removal of the foreign body, the wound kept discharging for a considerable time, but ultimately healed, and all the symptoms, both general and auscultatory, decreased; but the frequent pulse and night-sweats remained, and the patient died from phthisis seven months after coming into the hospital.

On examination after death, extensive tubercular disease of the summit of both lungs was found.   The lower and back part of the right lung was closely adherent to the ribs by a hard and almost cartilaginous substance: this was continuous with a mass of dense cellular tissue, which descended beneath the pleura costalis, and passed out of the chest between the eleventh and twelfth ribs, close to the outer edge of the sacro-lumbalis muscle, and was continued beneath the lumbar fascia, which was separated from the muscles for the space of one and a half or two square inches. The cavity thus formed was lined by a soft, unorganized, false membrane: it did not communicate with the chest, but led by a small fistulous passage to one of the external openings; the ligamentous adhesion was closely applied to the pleura covering the lung, and at that point a small cylindrical canal was found, which communicated with the largest bronchial tube of the inferior lobe of the lung: the canal itself seemed formed by a dilated bronchus.   The surrounding substance of the lungs was friable, and of a grayish brown colour; but almost free from tubercles, only one being found.

M. Stanski says that he has found as many as twenty cases similar to the preceding, reported in different works, and the effects and symptoms of the accident were always the same.   The spikes of different grasses put into the mouth have got into the respiratory tubes, while the patient has been speaking, laughing, or coughing.   To get in this way into the trachea, the lower extremity of the spike must have been introduced first, otherwise the spikelets would have diverged, and obstructed its passage.   It rapidly finds its way into some bronchial tubes, where it excites irritation and suppuration, and eventually reaches the surface of the body, and is discharged along with the matter which surrounds it.   Any operation for the removal of the ear is to be condemned: it traverses the trachea with the greatest rapidity during the act of inspiration, as is proved by the short duration of the fit of suffocation; and, in all the cases that M. Stanski has found, the process by which the foreign body has been got rid of has never produced death, except when complicated with other disease, as in the present case, where the patient evidently died of phthisis after recovering from the accidental affection, and in consequence of tubercles existing in the summit of the lungs previously to the occurrence of the accident.   *Gazette Médicale de Paris.   July* 1, 1837.

New Theory and Treatment of Erysipelas.   By M. BLANDIN, Surgeon to the Hôtel Dieu, Paris.

ERYSIPELAS may be divided into two varieties, according to the causes which give rise to it.   These may be either external or internal; as a wound or injury, or a disordered state of the constitution generally; and the disease will vary considerably in its characters as the one or the other cause may occasion it.   According to M. Blandin's theory, that variety which is excited by external injury is *at first* a local affection, and afterwards tends to diffuse itself generally; the fluids, which are altered by the diseased actions going on in the part, having a concentric course, and thus spread themselves through the whole system and excite violent reaction. Erysipelas, on the contrary, arising from an internal cause is at first generally diffused, and has a tendency to become localized; nature making an effort to determine the disturbing influence towards a single point.

With regard to the anatomical nature or proximate cause of erysipelas, M. B. considers that it consists in acute inflammation of the minute lymphatic vessels of the skin, which are first affected, and inflammation of the substance of the skin itself afterwards follows.   [This idea of the absorbents being inflamed in erysipelas is not new, though M. B. is the first who has extensively applied it, in numerous cases, both to pathology and therapeutics: this same theory has been entertained by several authors; among others, MM. Ribes, Dance, and Chomel.]   The degree of inflammation between the lymphatic capillaries and the substance of the skin is not always in equal proportion.   In erysipelas from internal causes, it is the latter which predominates; in the traumatic variety, the absorbents are principally affected: and this causes the difference in the seriousness of the affections; for

according to M. B., physicians generally find erysipelas a trifling disorder, while surgeons regard it as a most serious disease.

M. Blandin's treatment is founded on the principle that the preexisting and predominant affection is inflammation of the lymphatics, and that, when this is checked, there only remains simple inflammation of the integuments. As the disease is propagated towards those lymphatic ganglions which are situated most centrically, or nearest to the trunk, it is here that we should commence the treatment, which consists in successive applications of leeches over the absorbent glands, and not on the erysipelatous surface of the skin itself; as in the latter case they only weaken the patient. This plan is principally applicable to the traumatic variety, when situated in the extremities; but he considers that it may be also employed with advantage when the skin of the trunk is affected, and when the disease arises from internal causes.

M. B. has applied his plan of treatment to a great number of cases, and informs us that, during two years that he has employed it, he has scarcely lost a single patient; but he ought to publish the exact number of instances in which he has tried it, with the particulars of the different cases: this would render his statements much more valuable.

Journal des Connaissances Médico-chirurgicales. July, 1837.

New Mode of tying Polypi of the Pharynx. By Dr. FELIX HATIN.

THE tumour in this case was fixed by a large pedicle to the base of the cranium, and descended vertically into the pharynx, which it filled, reaching to the uvula; the soft palate was pressed downwards and forwards by it; the passage of the breath through the nostril was entirely impeded; the voice was what is improperly called nasal, and deglutition difficult. The operation was performed with a quickness and facility which M. Lisfranc admitted was surprising; and Dr. Hatin thus explained the method he adopted: In the ordinary method, an elastic sound must first be passed through one of the nostrils, and the posterior extremity, being brought forward into the mouth, is to be attached to the two ends of a ligature, in which a noose has been previously made; the sound is then to be drawn back, and the extremities of the ligature pulled into the nostril, while the noose passes towards the back of the mouth. The great difficulty is to preserve the loop of the proper dimensions, and to get it over the extremity of the tumour; a thing by no means easily accomplished, in consequence of the depth of the situation in which the polypus is fixed, and the convulsive movements caused by the fingers of the operator in the throat of the patient.

To overcome these difficulties, Dr. Hatin has invented an instrument (called *porte-ligature pharyngien*), the construction of which is very simple. It consists of a flat metallic blade, curved at one extremity, which is to be introduced into the mouth through the noose in the ligature, and placed under the polypus, so that the ligature may be conducted over it. For the purpose of widening the curved extremity, so as to adapt it to the width of the tumour, two other narrow and flat metallic blades are fixed on the upper surface of the instrument, each of which is divided by a hinge. At the straight extremity of the instrument which is taken hold of, these two pieces diverge from each other, and are connected by a screw: when this is turned, the blades at the proximal end are brought nearer together, and diverge at the curved end (beneath the polypus), which is thus widened. To render the instrument complete, a stilette fixed to a spring, with two little hooks at its extremity, is placed in a groove at the lower side of the instrument; the ligature is fixed to the hooks, and, by pressing on a button at the end of the stilette, the noose is conducted at once to the bottom of the tumour, over which, by pulling the threads through the noose, it may easily be made to slip. It is difficult to explain the mechanism of the instrument by a description; but the above will serve to give some idea of a contrivance by which a most difficult operation is rendered perfectly easy.

[From the difficulties attending its application, the ligature is hardly ever ap-

plied to the removal of polypi in the nose or fauces in this country. The instrument of Dr. Hatin seems capable of removing this difficulty in a great measure in tumours in the latter situation; but still one imperfect part of the operation must be the difficulty of drawing the noose tight round the base of the tumour, after getting it over the extremity: this can be but imperfectly accomplished by pulling the extremities of the ligature through the nose.]

Revue Méd. fran. et étran.   Sept. 1838.

Recovery from a Wound of the Ascending Aorta.   By Dr. HEIL.

JOSEPH HOFFMAN, æt. thirty-two, a Bavarian soldier, while engaged in a drunken quarrel in the year 1812, received a stab in the left side. The weapon which was a common table-knife penetrated the thorax between the fifth and sixth ribs. The left lung was wounded, and the stab was followed by copious hemorrhage. He remained some time exposed to the cold air, and when the doctor saw him, which was about an hour after the receipt of the wound he was lying still bleeding but apparently lifeless. He was removed to the hospital, and the edges of the wound brought together by plaster, although blood still continued to ooze. After having remained some hours unconscious he came to himself, but was then amaurotic, probably from the abundant depletion which he had undergone. In about four months the external wound had entirely healed, but the amaurosis in spite of all the remedies employed still continued; and in this state he left the hospital. He led it appears an irregular life, and some months afterwards was again brought into the hospital labouring under an attack of pneumonia, of which he died in the year 1813. On examining his body, the cicatrix of the wound in the chest was plainly visible: in laying open the cavity, it was found that the correspondent part of the lung was adherent to the pleura, and that the cicatrix extended through the whole substance of the lung to the back part of the organ, where the weapon must have passed out. From this point the knife appeared to have extended upwards towards the ascending aorta; and in this vessel there was an opening with an irregular border about a quarter of an inch in length, which was occupied by a firm coagulum of blood, (thrombus.) On laying open the vessel the weapon was found to have penetrated completely into its cavity. There was a rounded cicatrix on the inside completely closed up as on the outside. The extraordinary cure had probably taken place from a coagulum having formed during the syncope, into which the man was plunged after receiving the wound, aided by the cold to which he was exposed.

[The description of the cicatrix in the aorta is not very clearly given; but the case is altogether very remarkable, as it shows that wounds of this important vessel are not always *absolutely* mortal, as they are laid down in some systems of classification.]   *Henke's Zeitschrift.* 1837-8.

Treatment of Varicose Veins.   By M. VELPEAU.

M. VELPEAU continues to treat varices, and to cure them radically, by passing a pin beneath the varicose vein at a slight distance from the swelling of the vessel. Then, by means of a thread wound over each protruding extremity of the pin, he compresses the vessel and the tissues interposed, so as to stop the circulation in the vein. This procedure, causing but little pain, is said almost always to succeed in the hands of M. Velpeau. It very rarely gives rise to phlebitis, and, when this does happen, it is seldom in any great degree. [We extract this, not because of its novelty, but because it is not a practice generally known, and we are aware of its successful application. It appears to hold out a hope of permanent relief in a most troublesome affection.]   *Gazette des Hôpitaux.* No. 53.   1838.

On the immoveable Fracture-bandage.   By Dr. FRICKE.

DR. FRICKE has given reports of sixteen cases of fracture successfully treated by means of Seutin's starch-bandage. He applies it by first rolling the limb with a

common broad bandage, over which a layer of starch is placed. On this two pasteboard splints, the length and shape of the fractured limb, and nearly encircling it, are applied wet; then a layer of starch, and over this a roller, after each turn of which the starch is applied; the whole being covered with paper, to prevent its sticking. Fricke has usually found the application of this bandage successful.

The following are some of the advantages attending the use of this bandage:— 1. The materials are readily procurable. 2. The apparatus lies close to the inequalities of the extremity. 3. Any part of it can be renewed without disturbing the other parts. 4. It is light, and does not prevent the use of the extremity. 5. The limb is so firmly supported, that in two days the patient can leave his bed and walk about.

If the lower limb be fractured, it should be supported by means of a sling round the neck. In applying this bandage, Fricke recommends the surgeon to wait for the subsidence of swelling and inflammation. He does not think, with Seutin and Velpeau, that the patient might even undertake a journey immediately after the injury when the bandage is dry.

Hamburg Zeitschrift f. d. g. Med. April, 1838.

Deglutition of a large Silver Coin.

AN Austrian soldier offered to swallow a coin nearly as large as a crown-piece, on the condition that it should thereupon belong to him: but, on his attempting to do so, it remained in the œsophagus. Emetics were given in vain, and all mechanical attempts failed. Eventually it descended to the stomach. It was necessary to bleed him twice, to remove the inflammation which had been caused by the attempts to remove the coin. The bowels continued costive during four days, notwithstanding the use of laxatives and injections. On the sixth day the money reappeared, whilst the patient was evacuating his bowels.

Journal des Connaissances Médico-chirurgicales. Jan. 1838.

MIDWIFERY.

Memoir on Absorption of the Placenta. By Dr. VILLENEUVE, Chief Surgeon of the Hospice de la Maternité at Marseilles.

IN the following memoir, Dr. Villeneuve brings forward several cases to prove that in certain instances of morbid adhesion of the placenta, the whole or part of that organ may be retained in the uterus, and be entirely absorbed into the system, without producing any serious effects on the constitution. In addition to two cases which he has himself met with, he notices six others which have been observed by different medical men, and which he relates at considerable length in this memoir. We will endeavour to extract, as fully as our limits will permit us, the principal facts in proof of this interesting occurrence.

Professor Naegele, of Heidelberg, appears to have been the first who called the attention of practitioners to the entire absorption of the placenta, without any dangerous results to the mother. He first observed the occurrence in 1803. Three cases collected by him are related in the present memoir, together with three others observed by Dr. Saloman, M. Paul Dubois, and M. Gabillot, which all nearly agree in the following particulars. In four out of six of them the labour was premature; in all of them there was unnatural adhesion of the placenta, either partial or total. The cases of partial adhesion, four in number, were attended with considerable hemorrhage, which, in two instances, was accompanied with irregular contraction of the uterus, impeding the introduction of the hand. In the other two cases the adhesion was so firm, that in one the cord broke off, and in the other it was found impossible to remove the whole of the placenta with the hand. In the cases of partial adhesion, also, considerable constitutional disturbance and uterine inflammation followed; though all the patients recovered: in none of the cases were any portions of the placenta expelled with the lochia. In the two instances where the adhesion

was general, and the placenta not separated at all from the uterus, there was either a very trifling hemorrhage or none, and the placenta was totally absorbed without giving rise to any constitutional disturbance, and was accompanied with but very little lochial discharge.

In the first case observed by M. Villeneuve himself, the placenta was found morbidly adherent after a tedious labour, and was carefully detached, with the exception of a few fragments which could not be removed. The lochia were at first abundant and became very fœtid, but after a short time they were suppressed, and the patient sunk under typhus fever.

The author has reported his second case at considerable length. The patient, aged twenty-five, was confined at the end of the sixth month of her second pregnancy with three children. The placenta belonging to the second and third fœtuses were expelled directly after the birth of each child; but the afterbirth of the first infant the midwife could not succeed in extracting, and broke the cord. M. V. was called in; and on introducing his hand into the uterus, found the placenta firmly adherent by its whole circumference. The examination produced so much pain and irritation, that it was thought better not to attempt its removal, and the patient was taken to the Hospice de la Maternité, where she went on very favorably; the lochial discharge was very scanty. On examining the uterus externally on the eighth day, it was found reaching midway between the umbilicus and the pubes, and as large as in the fourth month of pregnancy. On the eleventh day, on examination of the vagina, the lower part of the uterus appeared occupied by some substance. The patient at this time returned home, and on the twentieth day from her confinement, subsequently to sexual intercourse, a considerable discharge took place resembling that of ordinary menstruation, only lasting for rather a longer time. No clot nor any solid substance was discharged. The patient was again examined on the thirty-first day from her confinement, when the uterus had returned to its natural size.

This case is remarkable in several respects, 1st, from being a triple birth; 2d, from the three placentæ being distinct, and one of them coming away between the birth of the second and third children; and, lastly, for the retention and absorption of the placenta, of which no portion was discharged or passed with the lochia, which were, indeed, less abundant than usual and not at all fætid. What became of the first placenta is the most important question in this case; how can we account for its disappearance otherwise than by its absorption? Can we admit, with Mme. Boivin, the peculiar malformation of this organ, in which it is imperfectly developed and almost wanting? That idea cannot be adopted in the present instance, for the child belonging to the retained placenta lived longer than either of the others, and the umbilical cord was the largest of the three; so, judging from analogy, the retained placenta ought to have been as large if not superior in size to either of those extracted.

From the foregoing observations M. Villeneuve draws the following conclusions: 1. Absorption of the placenta, though an extraordinary fact, is nevertheless one quite incontestible. 2. This absorption can only take place, without producing lochial discharge or hemorrhage, where the adhesion is complete; and is accompanied with flooding when partial. 3. Total adhesion is perhaps never fatal: the cases of death only belong to those of partial adhesion, and arise either from hemorrhage, or by the absorption of putrid matter produced from the introduction of air, and the irritation of the uterus in the attempts to remove portions of the placenta, or, lastly, from the manner of interference producing metro-peritonitis. 4. A placenta which is not fixed to the uterus by organic and intimate adhesions cannot be absorbed, though it may perhaps be retained for several days without danger, if there is contraction of the uterus. 5. To stop the flooding, it is necessary to remove with the greatest care all the detached fragments in a case of partially adherent placenta. 6. Forcible separation of the placenta is both dangerous and useless; dangerous because the uterus may be injured, and useless because the adherent portions will be absorbed without increasing the danger of the case.

Gazette Médicale de Paris. July 8, 1837.

Extra-Uterine Pregnancy occurring twice in succession in the same patient, at an interval of some years, and terminating favorably in both instances, and in the same manner. By Dr. GALIAY.

A YOUNG woman shortly after being married was knocked down and ill treated in a quarrel. She was laid up for several days in consequence of the injuries which she received, but recovered without experiencing any further inconvenience at the time. Shortly after she found that she was pregnant, and her pregnancy seemed to follow the natural course. At the end of the time which she had calculated upon the usual symptoms of labour came on, but the pains went off without being followed by any result. Months passed, and she felt no other inconvenience, except her size remaining the same, and both her neighbours and herself began to doubt her having been pregnant at all. After a long interval, the exact duration of which Dr. Galiay was not acquainted with, she was seized with acute but intermitting pains in the abdomen, which were felt most severely in the neighbourhood of the groins and anus, accompanied with abdominal tenderness and febrile symptoms. The organs of generation were found on examination to be in their natural state. After a considerable period, a violent paroxysm of pain came on, accompanied with an immediate desire to evacuate the bowels, but her efforts to do so were fruitless. On examination, there was found the bone of a fœtus firmly impacted within the sphincter ani. After this was removed, she passed a number of others, which afforded her great relief, and she rapidly recovered her natural size and health. This happened in 1829. Subsequently to this she remained quite well till the year 1834, when she again became pregnant; and after some interval, the fragments of another fœtus were expelled per anum as at the former time, the only remarkable difference being that in the latter case the evacuation was accompanied by no pain nor constitutional disturbance, and she soon regained her natural health, and is now perfectly well.

The author observes that the remarkable circumstance in this case is, that the same phenomena should occur in two consecutive pregnancies, an interval of between four and five years having elapsed between them: he also says that it is the first case of the kind that has been observed, as he cannot find a similar one recorded in the annals of medicine.

[As Dr. Galiay says, the preceding case derives the whole of its interest, from occurring twice in succession and running through the same course. We have not been able to find any other recorded which exactly resembles it. In the 5th vol. of the Edin. Med. Essays there is related a case, in which the patient seemed to have a second extra-uterine pregnancy before she got rid of the first. Several instances have been met with where a woman has conceived again, and even borne a living child, while a former fœtus has been retained in the abdomen. It is a matter of regret that the author has not detailed this case with greater precision and fulness. The exact time intervening between the different periods should have been mentioned, as well as the state of the remains of the fœtuses at the time of their expulsion; whether any purulent or putrid matter was evacuated along with the bones, which are the only parts mentioned; and whether the fragments of the second fœtus were in the same state as those of the first.]

Gazette Médicale de Paris. July 29, 1837.

MEDICAL JURISPRUDENCE.

Case of Suspected Infanticide. By Dr. GRAFF, of Darmstadt.

[A CHILD having been found dead under suspicious circumstances, a medical inspection was directed to be made to determine the cause of death.]

Externally, the following appearances were met with. The skin was soft and shrunken, the cuticle easily peeling off. The countenance was wrinkled and presented an aged appearance. About the neck there were marks of lividity, afterwards found to correspond with deep discoloration of the cervical muscles. On

many parts of the head, especially posteriorly, there were patches from which the cuticle had been separated. There were no external wounds, with the exception of a small puncture on the outer side of the left foot. This wound contained a little blood, and its margin was somewhat livid and discoloured; but there was no mark of swelling or inflammation in the surrounding structures. The nails of the fingers and toes were not fully developed. The child was of the male sex, but there was no appearance of testicles. The body weighed three pounds. The umbilical cord, about two feet in length, which had been completely torn from the placenta, lay on the left side of the body, and was partially twisted round the under part of the left foot.

Internally. On reflecting back the skin of the cranium some blood was found effused: and in the left parietal bone there was a fine fissure about an inch in length, extending to the sagittal suture. Blood escaped through this fissure from the cavity of the cranium. The brain was throughout highly congested: beneath the fissure in the parietal bone there was about a teaspoonful of thick black blood. The muscles of the neck were of a very dark colour. In the chest the diaphragm was found much protruded upwards, the lungs of a dark colour and situated quite posteriorly. Some blood was found extravasated in this cavity. The lungs with the heart and thymus attached readily sank in a vessel of cold water. The lungs separated from the other organs also sank: when divided, they were very firm, not crepitating, and the divided portions sank when placed in water. The foramen ovale was open. No particular appearances were met with in the abdomen. The stomach was small and contained a viscid bloody fluid. The bladder was empty, and the large intestines contained meconium.

From this examination the following opinion was given:

1. *The child was not mature, being about from four to six weeks under the full period.* The proofs of this were: the length, the weight, the shrunken appearance of the body, especially the limbs; the aged appearance of the face; easy separation of the cuticle; the great elasticity of the bones of the cranium; the cartilaginous state of the ribs, and imperfect development of the nails.

2. *The child had either not breathed or breathed but imperfectly.* This was established by the situation, colour, and consistency of the lungs; their sinking in water entire and divided; absence of crepitation; the small quantity of blood contained in them, and the open foramen ovale.

3. *Nevertheless the child was born alive.* The evidence in favour of this was: unusual lividity of the muscles of the neck indicating compression at that part, and confirming the statements of those who found the child with a cloth tied tightly round its neck; the great ecchymosis about the scalp, with the fissure in the parietal bone and extravasation of blood beneath. Some rare cases are on record, in which under difficult labour the cranial bones of the child have become fractured by the muscular contraction of the uterus alone; but the occurrence of such an accident is altogether improbable if not impossible, in cases where, like the present, the child is immature, the cranial bones elastic, and the sutures yielding. If the fracture and extravasation occurred after birth, it follows that the child must have been living; for otherwise it is impossible to admit that such an extravasation could have taken place. Another proof of live birth exists in the fact of blood having been found effused in the chest. In some instances, twisting of the umbilical cord around the neck may lead to asphyxia; but this view was here inadmissible, because when the body of the child was found, instead of the umbilical cord *a cloth was tied fast around the neck.*

Allowing that the preceding facts show the child had lived after birth, the supposition of suffocation during birth through the twisting of the umbilical cord, cannot of course be entertained. If any cause operating after birth had produced the effusion in the chest, it is impossible that the child should have been born dead.

4. *The death of the child was most probably due to strangulation,* through the cloth found on its neck, or simultaneously through the hinderance to respiration, and the injury to its head. This opinion is borne out by the apoplectic state of the vessels of the head, the large extravasation in the chest and head, the wound in the

left foot, which could not have been produced in the womb or during birth; and which on account of the ecchymosis accompanying it, must have occurred during life.

[REMARKS. This case offers some important reflections in relation to the proofs of infanticide. We fully agree with the reporter in the first two conclusions; viz. the immaturity of the child, and the fact of its not having breathed or breathed but imperfectly: but we do not see that the *medical* data which he had to guide him, justified so exclusive an opinion of this child having necessarily lived after birth. Lividity and ecchymosis about the neck and scalp offer no evidence of live birth; for experience shows that these may be equally produced during birth, and the child not come into the world alive. The fissure in the parietal bone is assumed to have been indicative of violence, merely because the bones were elastic and yielding; but, from the description of it, we are inclined to believe that it was probably a fracture from the efforts of the uterus during birth. Murderous violence to the head after birth is rarely confined to the production of a *slight fracture* in one parietal bone. At any rate, in the absence of direct evidence as to the origin of so slight an injury, the presumption is as strong for natural as for violent causes. The reporter seems to imagine that extravasation of blood can only take place in the *living* child; but it is well known that precisely similar appearances may result from violence to the body of one which is recently dead. The presence of extravasation or lividity cannot therefore be taken in an abstract view, as any evidence of live birth. The injury on the foot bore more clearly the marks of design; and this, together with the violence about the head seems to show, that the whole of the body of the child was in the world when it was produced; but whether the child was actually living or recently dead at the time, it does not establish. Perhaps the best evidence of this child having been living and wilfully destroyed, we have in the circumstances, especially in the fact that a cloth was tied tightly round the neck; for why should this be done to a child already dead? At the same time, this murderous violence might have been used towards it *during the act of birth*. The non-inflation of the lungs is of course no objection to the child having come into the world alive, and lived long enough to be the subject of murder.]

Henke's Zeitschrift. 1838.

Fatal Wound of the Head. Death through alleged medical neglect from the non-performance of a necessary operation. By Dr. SPEYER, of Bamberg.

ON the 19th March, 1837, a drunken man during a quarrel at an inn received a smart blow on the forehead from a stick. The shock was so severe that he was knocked down, remained insensible for half an hour, and vomited several times. A surgeon was called, who found by a cursory examination that the frontal bone above the left eye had been driven in, and having applied a bandage he directed that the man should not be moved from the house. In spite of this direction the man's friends in the course of the evening placed him in a waggon and drove him some miles over a rough and stony road. A nearer examination of the wound was made the following day. Its situation was on the left side of the frontal bone near its middle; it was about three quarters of an inch long, and the edges were ragged and depressed. The bone was indented, and at the lower part of the wound was evidently fissured, the fissure extending towards the nose. Vomiting had then returned, and there was so little consciousness that the necessary legal questions could not be put to him. The pulse was quick and other symptoms of febrile irritation had set in. Another surgeon, who was called in about this time, after having examined the wound, proposed trephining; but the operation was not performed, and on the 23d symptoms of inflammation of the brain appeared. Under these circumstances the operation was altogether declined, it being then considered too late to resort to it. The man continued to become worse, and on the 28th (the ninth day after the injury) he expired in violent convulsions. During the time that he lived the treatment had been chiefly of an antiphlogistic nature.

An inspection of the body was ordered, and attention was first directed to the situation of the wound. The bone was found indented and fissured: on raising it

the internal table corresponding to the seat of injury was much fractured, the sharp spiculæ projecting into the dura mater which had been perforated to the extent of two lines in length and one in breadth. The brain had become here compressed and its substance inflamed. The whole of the vessels around were much congested. A small quantity of matter was found between the cortical substance and pia mater; and the left hemisphere was to some extent softened and pulpy. The other cavities of the body were successively examined, but, with the exception of a congested state of the upper and posterior parts of the lungs (probably cadaveric), nothing abnormal was found.

The medical opinion expressed was that death was a consequence of the wound, this having given rise to the fatal inflammation, suppuration, and softening of the brain. The inspectors then proceed to enquire whether these serious consequences operated by producing apoplexy or asphyxia, and at last settle that it must have been a case of *asphyxial apoplexy :* i. e. death must have proceeded partly from one and partly from the other condition. In relation to the treatment pursued, they suggested that as the fractured portion of the skull was the main source of irritation and death, this ought to have been removed by the trephine. They do not undertake to say that this operation would have necessarily been successful; but they thought that the deceased's recovery was possible only by its having been timely performed.

It next became necessary to consider how far the treatment pursued and the neglect to perform the operation had led to a fatal result. The removal of the deceased many miles soon after the accident must have rendered his condition more serious, since it favoured the access of inflammation. The proper time for the operation was, in their opinion, on the first or at the furthest on the second day; because by delay the result of the operation always became more uncertain. The legal questions were therefore answered in the following way:

1. The deceased died a violent death.

2. Death was not a direct but an indirect consequence of the wound. The wound could not be pronounced absolutely mortal, since a timely operation might have saved life; but the brain having sustained concussion from the violence, it was under all circumstances an injury dangerous to life. The law authorities not being satisfied required an answer from the Medical College of B., to the following question: "How far and in what degree of probability or of certainty the performance of the operation, or the application of proper treatment to the case, would have saved the life of the deceased?" They returned answers to the following effect:

1. The deceased died a violent death from the wound which he received on the head. The facts of the case sufficiently establish this.

2. The wounds were necessarily fatal. The deceased suffered from concussion as well as from compression and its consequences; all injuries of a most serious description. With the exception of drunkenness at the time of the accident, and his rough removal soon afterwards, there were no circumstances in the deceased's case likely to aggravate his condition. At the same time, the injury to the head was such that it might have readily destroyed life even had not these conditions existed.

3. The injuries were not of such a nature as necessarily in all cases to lead to death. Although he was seriously injured, it is possible that the deceased might have recovered under proper treatment. The great source of danger was the depressed bone leading to inflammation. Such a danger could only have been avoided by the timely use of the trephine. The operation was here imperatively called for; and it is in the highest degree probable that, had it been performed at a proper time, the life of the deceased might have been saved. Whatever difference of opinion may exist among surgeons as to the indications for this operation and the period for undertaking it, there could exist no doubt that it was eminently required in the case of the deceased. The opponents of the operation allow that it is necessary when, under fractures of the cranium, serious symptoms begin to appear. Had it been performed, judging from the healthy state of the deceased's

body and his previous good health, it would probably have terminated favorably. Subsequent treatment might have removed the effects of the concussion.

4. The violence operated indirectly in causing death, namely, by exciting inflammation.

[REMARKS. This case shows the importance of carefully attending to the treatment of a person who has been the subject of criminal violence. We cannot hesitate to agree to the opinion expressed by the members of the college, that in not performing the operation at a seasonable period, all chance of the man's recovery was taken away. The deceased might have died even had it been performed, but the law very properly will not be governed by mere possibilities. Here was clear evidence to show that the best means for recovery had not been used, in accordance with good professional practice and experience; and therefore the prisoner could not be held responsible for the deceased's death, without in some sort punishing him for want of skill in the surgeon. In the "*superarbitrium*" of the college, the second and third positions appear contradictory and inconsistent with each other; but it is probable that they intend to draw a distinction between such wounds being necessarily fatal when improperly treated, as in the deceased's case, and not necessarily fatal when proper means have been timely resorted to. It is singular that our continental brethren are rarely contented with finding out a clear cause of death, but that they always endeavour to rise through this to a higher stage of causation. In the case before us, to all practical men the discovery of the mischief in the brain would have been considered as sufficient to account for death; but the reporters go still further,—they gravely enquire whether this mischief brought on apoplexy or asphyxia, and resolve that both conditions existed, because the vessels of the brain and lungs were somewhat congested. This kind of speculation, the offspring of transcendental physiology, is as profitless as it is absurd: we wish to see it wholly laid aside in sober medico-legal reports.]

Henke's Zeitschrift.   1838.

Case of Suicidal Strangulation. By Dr. CARGANICO, of Darkehmen.

A PEASANT was found lying dead close to a well-frequented road and in the neighbourhood of dwelling-houses. The following facts came to light from the judicial and medical examination.

The body was lying stretched out at full length on the abdomen, the arms placed at the sides, and the hands half-closed. There was no mark of violence on the person or dress, or appearance of struggling or trampling on the grass around. The deceased appeared to be a robust man of about fifty; the countenance was pale, with the exception of slight cadaverous ecchymosis about the root of the nose. The eyes and mouth were naturally closed, the lips pale, the tongue in its natural position not swollen, the ears not discoloured, the features having a very placid expression. The hands which were half-closed, as is usual in death, presented no traces of violence. Particular attention was now paid to the neck: the cravat worn by the deceased was found carried twice round the neck in the customary way, and tied by a knot in front. On the left side a small stick about four inches and a half long had been thrust between the two folds of the cravat, then twisted by a half-turn, and so brought round that the lower end rested firmly against the angle of the jaw, which prevented it from returning. This had so compressed the neck by tightening the cravat, that it was impossible to introduce a finger under it. Near the body a branch of a tree was found, from which the stick had evidently been cut.

The neck beneath the cravat was scarcely depressed, and the skin was free from all sugillation or desiccation. The larynx, trachea, and os hyoides were normal. The body was free from all traces of violence, and there was not even the least sign of cadaverous lividity. Being satisfied from these facts that the deceased had destroyed himself by strangulation, the reporter did not make an internal inspection, but proceeded to draw up a medical opinion. He observes that a case of such interest was deserving of closer examination, in which we fully agree with him; but, at the same time, he assigns no satisfactory reason for having omitted to institute it.

1. The *cause of death* was apoplexy, not asphyxia, i. e. the ligature did not act by interrupting respiration, but by compressing the cervical vessels and preventing the free circulation of blood through the brain. The proofs of this were: paleness of the countenance and lips, and absence of lividity in the body. The want of a well-defined and ecchymosed depression in the course of the ligature is an additional proof that asphyxia was not the cause; while in apoplexy from strangulation this ecchymosed depression is often wanting. The absence of a mark he satisfactorily accounts for, by the fact that the compressing material was soft and wide, and that it was not very tightly applied, although still sufficiently so to affect the cerebral circulation.

2. *Was the strangulation suicidal?* This was rendered in the highest degree probable, if not certain. Suicidal strangulation is not very common, but in this case the means employed for accomplishing it as well as the whole of the circumstances were only intelligible upon such a presumption. Strong corroborative proofs existed in the absence of violence to the person and dress, the position of the body, and placidity of the countenance. A healthy strong man like the deceased could not have been easily destroyed by others in the manner described, without indubitable evidence of the fact being left on his person. Again, the ligature to the neck had not been violently applied as it would have been by a murderer, but the compression of this part had been gradual and comparatively slight. Murder by strangulation would have been indicated by extensive injury to the skin, and probably to the deep-seated organs of the neck, at least this is what is commonly observed: but none of these signs existed in the case of the deceased.

[REMARKS. Two facts are we think pretty clear in this case, and they are fortunately all that the law requires to be established: 1, that the deceased died from strangulation; 2, that he strangled himself. Whether the ligature operated by impeding the cerebral circulation by preventing respiration, or in both ways, is a point of no importance in a judicial light, and highly absurd to enquire into as a medical fact, where the *exterior of the body* only has been seen. Casper's observations already reported in this Journal, establish that the production or non-production of an ecchymosed mark by a ligature in strangulation, can furnish no evidence as to whether death took place by apoplexy or asphyxia; and we think it would have been somewhat surprising to have met with ecchymosis under the circumstances of the present case. The reporter first assumes that the deceased died from apoplexy, next that the suicides who hang themselves die more frequently from this cause, and then he comes to the conclusion that the deceased's having died of apoplexy is a proof of his having committed suicide! There is fortunately good evidence of suicide in the facts themselves, thus rendering it unnecessary to resort to such weak hypothetical reasoning as this.]

Henke's Zeitschrift. 1838.

MEDICAL STATISTICS.

View of the Operations for Lithotomy, and their Results, in the Hospital of Santa Maria di Loreto in Naples, during a period of sixteen years. By SALVATORE DE RENZI.

	SEX.		AGE.			EVENT.	
	Male.	Female.	Childr.	Adults.	Aged.	Cured.	Dead.
1821 to 1836	508	15	263	204	56	446	77
Spring of 1837.....	15	...	10	5	...	14	1
Autumn of 1836 ...	15	...	9	6	...	11	4
Total.........	538	15	282	215	56	471	82

This makes the proportion of deaths 1 in 6·7.

Il Filiatre Sebezio. Dec. 1837.

II. THE AMERICAN AND COLONIAL JOURNALS.

PHYSIOLOGY.

On the Relation between the Respiratory and Circulating Functions.
By Charles Hooker, m.d., of New Haven.

The author sets out with stating that, from numerous careful observations, he considers the numerical relation between the number of respirations and the beats of the pulse to be as 1 to $4\frac{1}{2}$ (except in early infancy); and this he regards as so constant that any considerable variation from it is a pretty sure indication of malformation or disease, provided that there is no mechanical impediment to the descent of the diaphragm, such as obesity, pregnancy, distention of the abdominal viscera, &c., which, by preventing the proper fulness of inspiration, will necessarily increase its frequency. From a disproportionate *increased* frequency of the respiratory movements, the general indication may be drawn that there is some impediment to the aeration of the blood; which may be owing to, 1, disorder of the lungs or air-passages; 2, some mechanical impediment to the motions of respiration; 3, imperfect function of the organic nerves of the lungs.

First, then, of disorder in the lungs and air-passages. In *pneumonia*, the disproportion is so marked as to be regarded by Dr. H. as almost a pathognomic sign; and, when the nature of the disease is ascertained, the relative frequency of the respirations affords a tolerable indication of the proportion of the lungs unfit for respiration. "In cases of extensive engorgement, it is not uncommon that the respiration is 45 in a minute, when the pulse does not exceed 90; the ratio becoming as 1 to 2. In extreme cases, the respiration becomes even 60 or 70; and in children I have occasionally noticed it 140 or 150. In less degrees of engorgement, the ratio is as 1 to 3, $3\frac{1}{3}$, or 4. In the early stages of this disease, which so often advances in a *latent* form to a most injurious extent, the frequency of the respiration may advantageously direct attention to the state of the chest when the general symptoms are those of simple febrile disturbance. In the early stages of *phthisis*, when the only prominent general symptoms are a progressive debility and emaciation, "a disproportionate increased frequency of respiration affords a strong presumption of tubercular deposition. A simple general debility increases the frequency of respiration; but it occasions a proportionate increased frequency of the pulse, the ratio of 1 to $4\frac{1}{3}$ is still preserved." In advanced stages of this disease, however, the proportion of blood in the system is so much diminished that a very small amount of aeration is required; and the frequency of the respiratory movements, therefore, does not bear any proportion to the quantity of the lungs unfit for service. The author notices *œdema* of the lungs as a very common cause of imperfect and therefore frequent respiration, and thinks that this state has been too little attended to. He also considers that there is a state which appears intermediate between proper inflammation and acute dropsy of the lungs, which might be termed œdematous inflammation, and which may lay claim to the title of a primary and idiopathic disease. This he states to have been the case in the epidemic influenza of 1831-2. Simple œdema he considers as almost universally present in general dropsical states, and to be very common in chlorosis and many cachectic diseases. We have ourselves noticed its occurrence in cases of the epidemic fever which may be characterized as severe synochus; and we have been accustomed to regard frequent and imperfect respiration, with extensive dulness on percussion, without cough or expectoration, as sufficient signs of its occurrence under those circumstances. We have always found the dulness diminish rapidly, and the respirations become slower, as the debility decreases; and in fatal cases, where death supervenes without any marked local affection, we have very commonly found an œdematous state of the lungs. It is unnecessary to enumerate the other diseases of the lungs and air-passages in which aeration will be necessarily imperfect, and the frequency of the respiratory movements increased.

Secondly, we may advert to the mechanical impediments which obstruct the respiratory movements, and thus increase their frequency. Of these, many are so obvious that they do not require to be enumerated; but under this head the author places also the "circumstances which render a full inspiration painful, as rheumatism or any inflammation of the intercostal or other muscles of respiration; or a like affection of the pleura, pericardium, heart, peritoneum, or any of the abdominal viscera." We do not think that this is exactly the place to class these causes of frequent respiration. Some of them (we would especially instance pericarditis and endocarditis) act, we are satisfied, on the respiratory movements, quite independently of the pain which full inspiration causes to the patient affected with them. We have scarcely ever noticed more frequent respiratory movements than in the advanced stages of acute pericarditis, when, adhesion of the two surfaces having taken place, little pain was felt; and we are disposed to think that the state of the circulation in such cases has a more direct influence than Dr. H. seems to suppose.

Of the third cause of frequent respiration assigned by our author,—imperfect function of the ganglionic nerves of the lungs preventing the arterialization of the blood,—we must say that it seems to us purely hypothetical; and we can by no means regard the view which the author has taken of its operation as more than an ingenious explanation of certain known facts, which are capable of being accounted for without it. We certainly should not be inclined to allow it to influence our treatment, until much more evidence has been adduced in support of it than that brought forward by our author, who seems to regard the doctrine itself as sufficiently established to need no argument in its favour.

The author then goes on to consider the general pathological effects of imperfect aeration of the blood, and adopts the doctrines of Bichât on this subject, which, as we have heretofore observed, are quite incompatible with the experiments and observations of later authors, especially Drs. Kay and Williams. However, the *modus operandi* is in this instance a matter of secondary consequence, since all are agreed that the imperfect arterialization of the blood soon produces very deleterious effects on the system. Besides the causes already enumerated, imperfect aeration of the blood may occur from disordered function of the motor respiratory nerves. According to Dr. H. this is the case in *typhus* fever; and to it we are to attribute the relative slowness of the respiratory movements, which is always (according to him) remarkable in some stage of the fever, being commonly in the ratio of 1 to 5, or 1 to 6, with the pulse, and sometimes even as 1 to 7 or 8. This disordered function of the nerves he attributes to the "lesion of nervous function in the brain," forgetting, it would seem, that the brain, strictly so called, has nothing to do with the ordinary respiratory movements. That the general class of sympathetic or excited actions, of which the spinal cord is the channel, is greatly disturbed in this disease is familiar to every one; and, in its advanced stages, the action even of the muscles which guard the orifices of the alimentary canal is paralysed. In *delirium tremens*, also, Dr. H. regards infrequent respiration as an important symptom; and he considers it to be the cause of nightmare, being itself the result of pressure of the viscera on the nerves. Imperfect arterialization of the blood may be also due to disordered function of the sympathetic nerves, some degree of which is very common in typhoid complaints of all kinds, and especially manifests itself in malignant cholera and in the variety of asthma with puerile inspiration described by Laennec.

As there are few diseases in which the blood is *excessively* aerated, but, on the contrary, many in which there is deficient arterialization, our author considers the general therapeutic indication connected with the relation between the respiratory and circulating functions to be "to promote the arterialization of the blood, or, in other words, to remedy deficient respiration." He considers that "*stimulants*, which ordinarily operate to increase the action of the heart, without a corresponding increase of the respiration, should be withheld or given with extreme caution, when the blood is imperfectly arterialized;" but he allows that in some cases they are beneficial, and that their utility may be judged of by their effect on the respi-

ratory function. On the other hand, he seeks for his remedies in the means which diminish the action of the heart and arteries, and thus tend to restore the balance and promote the arterialization of the blood; and in those which excite and invigorate the motor and organic nerves concerned in respiration. To the former class belong, of course, detraction of blood (so especially useful in cases where the pulse is *oppressed* by the influence of partial asphyxia), antimony, ipecacuanha, &c. and digitalis; which last the author states that he has employed to a large amount in the treatment of delirium tremens, and that, out of fifty cases of this disease, he has only lost four, in which there was a complication of disorders. The *modus operandi* of Dr. Graves's successful use of antimony combined with opium in the advanced stages of fever, he explains on his principles. The remedies which excite and invigorate the motor respiratory nerves are those termed *diffusible stimulants*, which Dr. H. regards as acting first on the brain, and then invigorating the system at large by their effect on the respiratory movements. The most novel part of his doctrines, however, consists in the recommendation of nitrate of silver as a medicine which has a particular influence in exciting and invigorating the arterializing (sympathetic) nerves of the lungs. In typhus fever and typhoid states of the system, constituting the malignant forms of scarlatina, erysipelas, &c., he places much reliance on this remedy, which he considers to have a marked influence also in delirium tremens, and combines with digitalis in the treatment of that disease. He gives it in doses of one eighth of a grain, repeated every hour, or once in two or three hours, according to the exigency of the symptoms. He illustrates its effects by a detailed and somewhat remarkable history of his own case of *erythema anatomicum;* in the relation of which, however, the influence of his preconceived views is sufficiently apparent. Calomel has also, he considers, a marked influence over the organic nerves of the lungs, and promotes the arterialization of the blood also by stimulating the other secretions. Those which are in any degree vicarious with respiration are, of course, to be promoted when the latter is deficient. Arterialization of the blood may also be assisted by ventilation, and by the removal of mechanical impediments to the respiration. One of the most common of these in low fevers is tympanitic distension of the alimentary canal, which Dr. H. states to be more relieved by nitrate of silver than by any other remedy.

[We have thus given a faithful account of Dr. Hooker's doctrines, in which there appears to us much that is sound as well as novel; but much, also, that requires confirmation by more extended experience. Unfortunately, Dr. H. leaves us almost entirely in the dark as to the extent of the data on which the results deduced by him are founded: we have, consequently, no means of estimating their value, without putting them again to the test of experience. We cannot but think also that, like many other men of ardent mind, he rides his hobby a little too far; but, perhaps, there are many who would not be induced to notice recommendations which are really of importance, if less urgently given.]

<div align="right">*Boston Med. and Surg. Journal. May and June,* 1838.</div>

MEDICINE.

Observations on Cerebral Auscultation. By J. D. FISHER, M.D.

[IN the year 1833, Dr. Fisher read a paper before the Boston Medical Society, on what he called the *cephalic bellows-sound,* which he has discovered to accompany certain diseases of the brain. The present paper, also read before the Boston Society, is an exposition of his more extended views and experience on the same subject, the more important of which we shall here extract. We know nothing personally of this new sign; and we lay the statements of Dr. F. before our readers without a comment.]

Normal sounds. I can, by applying my ear to the heads of healthy children, hear a sound which is evidently produced by the impinging of the air against the

walls of the nasal cavities during the act of respiration. It commences and terminates with the respiratory act. This sound is peculiar, and is readily recognized. It is the one which first attracts the attention, and resembles in all respects, except in intensity, the respiratory murmur caused by the air passing through the nostrils when the mouth is closed, and which is then audible to the person breathing. This sound, which I would denominate *the cephalic sound of respiration,* is heard rather more distinctly during expiration than inspiration; and becomes somewhat modified when the membrane of the nose is affected by a cold or other cause. A second sound which strikes the ear is one whose impulse seems to be transmitted from a distance. It is evidently that of the heart, and is a soft mellow sound, resembling that produced by softly palpipating our cheeks when distended by air. It corresponds with the action of the heart, and varies in frequency and intensity as the contraction of that organ varies in rapidity and power. It may be called *the cephalic sound of the heart.* The cephalic sound of respiration and the cephalic sound of the heart are the only sounds which auscultation discovers in the heads of healthy children when they are asleep or at perfect rest. If, however, the child should cry, or speak, or swallow, whilst the ear is applied upon its head, then other sounds may be heard. When the child cries or speaks, the sound of its voice is very distinctly heard at the surface of its head, or on whatever part of it the ear may be placed. It is generally sharp and piercing, and seems to arise out of the cranium itself, so near does it appear to be to the ear; and, when it is heard through the stethoscope, it seems as if it were vibrating about the mouth, and even to pass into the canal, of the instrument. This sound I would term *the cephalic sound of the voice.* It varies somewhat in its tone and apparent approximation to the ear, at different parts of the head. At the unclosed fontanelle it is less sharp, and somewhat more mellow and diffusive in its character, than at any other part of the head, and seems to be further removed from the surface. The other sound which attracts the attention attends the act of deglutition. When a child swallows any fluid, a sound of a compound character is readily distinguished by applying the ear to its head. I hardly know what the sound resembles, or to what I can compare it. It is peculiar, and cannot be described; but it can never be mistaken for any other bruit after it has once been observed and recognized. It has a liquid and a dull, massive tone, and is evidently caused by the act of deglutition: I shall therefore denominate it *the cephalic sound of deglutition.* This last-named sound may be best noticed while a child is nursing; for then it is less liable to be obscured or masked by the cephalic sounds of respiration or by any movements of the head.

I have described these sounds as they are developed in the heads of infants previous to the closure of the anterior fontanelle. They become modified in some respects by the influence of growth, and the density of the brain and cranium: this is more strikingly the case with the cephalic sound of the heart. In early infancy, and before the period of dentition, the cephalic sound of the heart is distinguished by a softness and diffusiveness of tone which it does not possess afterwards. In youths and adults, the sound acquires a coarser and harsher tone, and seems to be more remote from the ear. The cephalic sounds of the voice and deglutition are not so sensibly affected by the growth and increased density of the cranium and its contents. All the sounds which I have now described are most distinctly heard at the summit of the cranium, although they may be easily detected at any portion of its surface. Such are the murmurs or bruits which are constantly occurring in or traversing the heads of healthy individuals, and which auscultation reveals and enables us to appreciate. They unquestionably are the results of the functions to which I have referred them.

These cerebral murmurs, I find from observation, become modified by the presence of certain diseases within the cranium, and thus become symptoms of cerebral affections. This is manifestly the case with the cephalic sound of the heart. The cephalic bellows-sound which, in 1832, I discovered to accompany certain diseases of the brain is a modification of the cephalic sound of the heart.

Morbid sounds. The most important of these is that first described by Dr. Fisher, and still named by him *the cephalic bellows-sound.* It is thus described in his first case:

On applying my ear over the anterior fontanelle, which I was induced to do from observing its strong pulsatory motions, I heard a distinct bellows-sound. The sound is coarse, abrupt, rasp-like; is synchronous with the pulsatory motions of the fontanelle and with the arterial pulse, and occurs 144 times in a minute. It can be heard over any portion of the cranium, but it is most distinct at the anterior fontanelle. While listening to this sound, I can hear a murmur accompanying his respiration, and also a sharp resonance of his voice when he cries or utters any vocal tones. These sounds are distinct from and independent of the bellows-sound and of each other, and are constant in their occurrence. This new auscultic symptom, which may be properly called the cephalic bellows-sound, is confined to the head, as nothing resembling it can be detected in the heart or great blood-vessels passing from it, or in any artery or organ below or exterior to the head.

This new auscultic symptom is not a phenomenon of health. It cannot be detected in the heads of children or adults who are free from all disease or derangement of the bodily functions; while, on the other hand, it has been found to accompany, 1st, chronic hydrocephalus; 2d, congestion of the cerebral organs; 3d, acute inflammation of the cerebral organs, with serous effusion in or around them; 4th, abscesses in the brain; 5th, induration of the brain with effusion into its ventricles and at its base; 6th, compression of the brain. We have, then, one auscultic sound in the head which is a symptom of cerebral disease; and it is possible that the cephalic sounds of the voice and deglutition, as well as that of the heart, may also have been modified or altered in the same cases. I regret I did not devote more attention to these sounds, in order to ascertain the fact. Whether any alteration in the last-named normal cerebral sounds takes place or not, that which I have described under the name of cephalic bellows-sound accompanied, and was unquestionably dependent on, a pathological condition of the organs within the cranium. The whole history of the cases proves this; and we come now to a consideration of its seat and immediate cause; or, in other words, to enquire, 1st, in what organ or organs did this sound originate in the instances above mentioned? 2dly, what part of the cranium did it proceed from? and, 3dly, what was the immediate or proximate cause of its production? In regard to the organ or organs in which the sound had its origin, it is very evident, I think, that it originated and was seated in the arteries: for, in the first place, the sound was distinct from that produced by respiration, by deglutition, or any other operation going on within the head, that we can conceive of, save arterial action. Secondly, it was synchronous with the pulsations and impulse of the heart and of the carotid and temporal arteries, and also with the rising and impulse of the brain, as observed by placing the finger upon the unclosed fontanelle. Thirdly, the sound ceased, or at any rate was rendered inaudible, by compressing the carotid arteries, and arresting the circulation of the blood through them; and it became fainter and less distinct as the patient grew weak and the arterial action feeble. Fourthly, it resembled in all respects the *bruit de soufflet* which we hear in diseases of the heart and of the arteries; and, like that, it often passed into a continuous murmur, and was characterized at times by a musical tone. Fifthly, in studying the structure, distribution, and functions of the organs inclosed by the cranium, we must, I think, be convinced that the arteries were the only organs which could have emitted a bellows-sound like that I have noticed. Assuming it as proved, then, that the sound in question proceeded from the arteries, I may further observe, that those situated at the base of the brain were probably the ones in which it originated.

If, then, the bellows-sound proceeded from the arteries at the base of the brain, its production in the cases above related may be rationally and satisfactorily accounted for. It is now a well-established fact that the bellows-sound of the heart and of the arteries arises from an impediment to the flow of the blood through these organs. An impediment to the free passage of the blood through the large arte-

ries which lay on the base of the skull must, I conceive, have existed in these cases: for the brain is contained in a strong and unyielding bony case, and in itself incompressible. In all the cases in which the cephalic bellows-sound was heard, at least in all those in which it was heard and of which an autopsic examination was made, there was fluid congestion of blood-vessels, or a pathological state of the organs within the cranium which would and must have displaced the brain, and forced it against the compressible arteries on which it rested. The arteries being thus forced and pressed against the bony channels through which they coursed, their caliber must have been diminished. This condition of the arteries formed an impediment to the free passage of blood through them, and constituted the immediate or proximate cause of the cephalic bellows-sound.

In the course of the last three years I have noticed a modification of the normal cephalic sound of the heart in six cases of cerebral apoplexy. In each of these cases the sound of the heart, as heard at the surface of the cranium, was decidedly abnormal. Instead of its being soft, and appearing as if it proceeded from a distance, as in healthy adults, it seemed to be near the ear, and was characterized by a kind of impulse, as if the whole brain was suddenly raised up against the calvarium. So characteristic did this sound appear, I could not but believe that the brain *en masse* did actually strike against the cranium beneath my ear.

The sound, I am well aware, will not be easily detected and recognized by one who has had no experience in cerebral auscultation; but, having made himself familiar with the normal cephalic sounds, and particularly with the cephalic sound of the heart, the auscultator will meet with little or no difficulty in distinguishing the impulsive sound under consideration when he auscultates the heads of those labouring under cerebral apoplexy. I have heard it in every case of the affection in which I have practised cerebral auscultation; and from this fact I am strongly inclined to believe that it is a constant symptom of the disease.

Indeed, when we consider the condition of the brain and of the arteries at its base, resulting from an extensive effusion of blood within the cranium, we may readily conceive that such a symptom would necessarily be developed. The moment such an effusion occurs, the brain is suddenly pressed down upon the arteries on which it rests, and also against every point of its bony case. It cannot, then, for want of room, rise and fall with the pulsations of the arteries at its base, as it does in its natural condition: and, this being the case, the mass of blood thrown from the heart at each contraction of its left ventricle would strike with great force against the compressed parts of the arteries, and communicate a shock to the brain which would be transmitted to, and be heard as an impulsive sound at, the surface of the cranium.

American Journal of Med. Sciences.   August, 1838.

On the Treatment of Delirium Tremens.   By JOHN WARE, M.D., Boston.

[THE following is an important practical document, which we recommend to the notice of our readers, as an appendix to the article on this disease in our last Number.]

The number of cases in private practice was 69, occurring during a period of about twenty years. Of these cases, 63 occurred among males and 6 among females. The whole number of deaths was 11; all the fatal cases were of males. Of 31 cases at the Almshouse, 5 were fatal. The ratio of mortality in all the cases was thus very nearly the same.

1. Eight cases were treated by *large doses* of opium, given with the intention of bringing about a termination of the paroxysm by sleep. The quantity administered varied, in different cases, from twenty-four to seventy-two grains, and it was usually given in the course of forty-eight hours. Four of these cases proved fatal. One died after sleep had been procured, the patient never awaking after the full effect of the remedy had been produced, but expiring in a state of coma. The remaining three died without having slept. Neither of these eight patients were bled. One of them was the subject of a severe acute disease, dysentery, in the

course of which delirium tremens supervened: this was a fatal case. The others, so far as could be ascertained, laboured only under such general symptoms of disorder as are common to those made sick by intemperance, or some such chronic ailment as is frequent among persons of those habits, and could not be supposed to influence the course or event of the delirium. In the cases which recovered, restoration to health took place speedily and completely after sleep had taken place.

2. Seven cases were treated by *small doses* of opium, or opium given in such manner and quantity as not to have a distinct and powerful influence in the procuring of sleep; the quantity not exceeding two or three grains in twenty-four hours. Two of these patients died, both without having slept. One was labouring under severe peripneumony when attacked by delirium tremens: this case was fatal. One patient was bled, and this was one of the favorable ones.

3. Twelve cases were treated principally by repeated and continued vomiting, according to the mode of practice recommended by Dr. Klapp, of Philadelphia. Tartarized antimony was chiefly relied on for this purpose; but in a few cases the sulphate of copper and ipecacuanha were substituted, with no apparent difference in the effects of the treatment. Two of these patients laboured under severe disease, one of the brain and one of the cellular membrane around the knee-joint; the former died, the latter recovered. One patient was bled, and this recovered. Of the whole number, one died.

4. In two patients, a single copious bleeding from the arm was the only remedy employed, and in both the disease speedily gave way.

5. In nine cases, the mode of practice was what may be termed, for convenience of distinction, eclectic. The treatment was adapted to the prominent symptoms in each patient, having regard, in its application, rather to the general character of the case and the indications of derangement in particular organs, than to the presence of the peculiar affection of the brain which constitutes delirium tremens. Of course, a large proportion (seven) of these cases were decided cases of acute local disease, and were treated by the usual remedies. Five of the nine were bled; and of these, two died. Of the whole nine, three died; all of them being cases of peripneumony.

6. One case, in which the delirium accompanied erysipelas of the face and head, was treated by large doses of the sulphate of quinine. This recovered.

7. One case was treated by mercurials: salivation occurred, and the patient recovered.

8. In 29 cases, the mode of treatment was what may be properly denominated expectant. It is not intended to imply, however, that no remedies were administered. At the commencement of many of them, active measures were employed for a short period. Thus, some were bled, some leeched, to some an emetic was given, several were blistered upon the neck, and all were more or less subjected to the operation of cathartics. Besides these remedies at the outset, various articles were administered in the course of the several cases, but usually of an inefficacious character, or in such doses as probably to have had no influence on the course of the disease. For example, small doses of sp. ether. nit., liq. ammon. acet., tinct. hyoscyam., ext. conii, tinct. humuli, tinct. valerian, tinct. assafœtid., and various other medicines, were administered; but, from the amount and efficacy of the substances thus taken, no physician acquainted with their power would for a moment suppose them to have had any control over the disease.

All these cases were free from combination with acute disease, with one exception: in this there was inflammation of the arachnoid membrane of the brain, as determined by dissection. This was fatal. Four patients were bled, and all of them recovered. Of the whole number, 29, one died.

The results of the different modes of treatment will be more readily compared if they are thrown together into a tabular form.

Treatment.	No. Cases.	Bled.	Died.	Recovered.	Complicated with acute Disease.
Opium, large doses.....	8	0	4	4	1
small	7	1	2	5	1
Emetics	12	1	1	11	2
Bleeding	2	2	0	2	0
Eclectic	9	5	3	6	7
Quinine	1	0	0	1	1
Mercurials	1	0	0	1	0
Expectant	29	4	1	28	1
	69	13	11	58	13

It appears from this statement that, of 15 cases in which opium constituted the principal remedy, 6 died; whilst, of 54 in which opium was not used at all, or only incidentally and in small quantities, only 5 died. Still further, if we separate from these 54 the 9 cases in which the treatment was eclectic, and in which the mortality seems to have arisen from the combination of acute disease, we have a remainder of 45 cases, of which only 2 were fatal. Again, if we compare the mortality of those cases in which opium was pushed to the full extent advised by writers on this disease with those in which no active remedy was employed, we have a mortality of 1 in 2 against a mortality of only 1 in 29.

This difference in the results of treatment would seem altogether too great to be attributed to accident, and goes far to establish the truth of the opinion formerly expressed, that opium given in large doses is actually injurious to patients labouring under delirium tremens. But, even admitting it as possible that the great proportion of fatal cases occurring where opium was used was accidental, it certainly, I think, will not be contended that the favorable termination of the cases not treated by opium was also owing to accident: and it will certainly follow that opium, if not absolutely injurious to these patients, is at least useless; and that our success in this disease will be sufficiently satisfactory without it.

Boston Medical and Surgical Journal, 1838.

SURGERY.

On the Treatment of Hydrophobia on Physiological Principles.
By W. G. Maxwell, M.D.

Physiological inferences deduced from the observance of other diseases, agree with those I have made from the consideration of this.

1st. In hysterical convulsions continuing often for days, there is no relief till there is a change in the uterus, either by a discharge of blood, or the subsidence of inflammation: hence the treatment here is not to be directed to the spasms of the throat or the globe that rises thereto, but they are to be directed to the uterus: it is the same in hydrophobia; they must be directed to the seat, origin, or cause of the disease.

2d. In the convulsions of children, always proceeding from the stomach and bowels in 999 cases out of 1000, every treatment is empirical and dangerous that attempts the cure in any other way than in removing the cause thereof, which lies in the bowels; which being removed, the child opens its eyes, though they have been closed for days, thus showing that the vital organs still remain uninjured during all this time.

3d. In the various forms of tetanus, from wounds, the very same reasoning is applicable; the vital functions continue uninjured for long, till the repetition of diseased action in subservient organs induces death; the action constantly springs from the original wound, exerting the same influence as it originally did, continuing to involve, in succession, the columns of the nervous system. Every treat-

ment is consequently unsuccessful unless directed to the seat of the disease, from which, in successful cases, it has been remarked that there was generally a discharge of blood, or matter, or sanies, and a relief to the symptoms, which was the disease involving the nerve giving way, and the tension of the columns consequently subsiding.

In hydrophobia the same relation of cause and effect exists as in other diseases; and the same principle of treatment must be adopted as exemplified in those affections to which I have alluded.

The nature of the wound inflicted by the tooth of any animal, especially a dog, is as peculiar nearly as the symptoms resulting from it. The tooth is often blunt and ragged, yet the force with which it is applied causes it to penetrate through all the tissues it meets with in its progress. These are all individually torn asunder in a variety of directions, constituting a ramified lacerated wound. If the tooth comes in contact with the bones it bruises the covering thereof, penetrating also the same in many cases. The lateral force, too, which is applied, lacerates the internal parts in a similar manner; while the skin tougher than the rest, and more yielding, retains its wounded dimensions, so that, from the external appearance, the condition of the internal cannot be ascertained; nor is there anything to make a common observer suppose that there is aught peculiar in the internal wound.

The ragged edges of the internal surfaces, placed in apposition, again become soon glued together by the coagulable lymph; and the external wound also unites more firmly than the internal, from the circumstance of the peculiar tough condition and composition of the skin.

As long as the functions of all and every part of the system are carried on in perfect regularity the injury that has been sustained at a particular point will remain quiescent; but when any disturbing influence pervades the tissues, the abnormal condition of the wounded part, the enclosed lymph, and extraneous matter that may have been incorporated, become a nucleus for a more concentrated action in the obstruction they present; the vessels become enlarged, the internal parts of the wound separate, and around the germ (however minute) an inflammatory process is established. The nerves in the vicinity are enveloped in the same action, and partake of the same disposition which the (formerly latent) disease has now assumed.

The external wound, closely and firmly united, betokens none of this change, save by being slightly livid and elevated; and the attention of common observers is consequently alone directed to the more prominent affection of the organs subservient to the vital functions, which I have remarked are secondary, and springing from the original injury.

Treatment. The treatment must be directed to the source of the disease and not to the combating of the many symptoms which arise afterwards, in the interference with which death is oftener accelerated than retarded.

When the premonitory symptoms are first observed, no time should be lost in laying open the original cicatrix, and, having inserted a probe, ascertain the principal direction of the wound, and freely enlarge it accordingly; the bleeding being freely and constantly promoted till relief is obtained; and a subsequent discharge from the surfaces is to be kept up by means of a strong issue ointment.

Should the symptoms proceed with more or less severity, the nerve or nerves leading to the part must be divided without delay; the disease extends along them, and is fed from the original source; this source must be cut off; the disease of the central portion will subside, and the tension on the proximal columns be removed.

The further from the wound the nerve is divided, so much the better; but even its division in the vicinity will be attended with more or less complete relief.

However far the disease has advanced, the nerves should be divided, as the only chance of stopping a recurrence of the paroxysms, or preventing fresh accessions of intensity to the abnormal condition of the nervous columns.

Should the disease have so far progressed as to threaten suffocation, then the last resource of admitting air into the lungs may be adopted, viz. *the operation*

of tracheotomy. This will afford a period of respite, during which the disease, having now no fresh accessions from the original cause, may subside, which it will do if the respiratory columns have not been too seriously implicated from the long continuance of the action.

[Although there is nothing new in Dr. Maxwell's practice, and something falla-cious in his theory, we deem it well on the present occasion to recall the attention of the profession to the subject of the local treatment of this horrid disease.]

The Indian Journal of Med. and Physical Science. January 1, 1838.

MEDICAL STATISTICS.

Mortality Table for the City of New York, (with the Names of the Diseases,) for a Period of thirty-two years ; viz. from 1805 *to* 1836, *both inclusive.* By H. G. Dunnel, m.d., City Inspector.

Diseases.	Total Deaths.	Comparative Mortality from each Disease.*
Nervous System.		
Inflammation of Brain	1676	1 in 72.
Dropsy of Brain	4986	1 in 24·2.
Apoplexy	2075	1 in 58·11.
Palsy	1057	1 in 114·1.
Convulsions	9343	1 in 12·91.
Epilepsy	219	1 in 551·07.
Catalepsy	1	
Hysteria	30	1 in 4022·8.
Chorea, or St. Vitus's Dance	7	1 in 17240.
Asphyxia	74	1 in 1630·86.
Neuralgic, or Nervous Diseases	100	1 in 1206·84.
Lock-jaw	191	1 in 631·85.
Hydrophobia	11	1 in 10971.
Insanity	367	1 in 328·83.
Respiratory System.		
Croup	3947	1 in 30·57.
Hooping-cough	2516	1 in 47·96.
†Lungs or Membr. Inflammation	7578	1 in 15·92.
Dropsy of the Chest	883	1 in 136·67.
Bleeding from the Lungs	196	1 in 615·73.
Asthma	328	1 in 367·93.
Consumption	24883	1 in 4·85.
Circulatory System.		
Heart, Organic Disease of	79	1 in 1527·64.
Fever, (type not named)	1475	1 in 81·81.
Intermittent	327	1 in 369.
Remittent and Bilious	1480	1 in 81·51.
Malignant or Yellow	477	1 in 253.
Inflammatory	143	1 in 843·94.
Typhus and Nervous	3602	1 in 33·5.
Hectic	59	1 in 2043.
Eruptive Fevers.		
Scarlet	1983	1 in 60·85.
Measles	2117	1 in 57.
Small-pox	2578	1 in 43·75.

* No notice is taken in this column of Casualties, Suicides, and Still-births.

† Among the deaths from inflammation of the lungs and membranes are classed deaths reported by pleurisy, peripneumonia, bronchitis, cold, cough, influenza, pneu-monia typhoides, and inflammation of the chest.

Diseases.	Total Deaths.	Comparative Mortality from each Disease.
Water[?]	7	1 in 17240.
Erysipelas	289	1 in 417·23.
Herpes	20	1 in 6034·2.
Aphthæ, or Sprue	802	1 in 150·47.
Leprosy	6	1 in 20114.
Scalded Head	3	1 in 40228.
Aneurism	56	1 in 2155·07.
Bleeding from parts not named	328	1 in 367·81.
Dropsy of organs	3431	1 in 35·17.
Digestive System.		
Stomach, bleeding from	21	1 in 5746·9.
Dyspepsia, or Indigestion	122	1 in 907·24.
and Bowels, Inflammation of	3252	1 in 37·11.
Cramp of	241	1 in 500·76.
Colic	215	1 in 561·32.
Cholera, the	4484	1 in 26·91.
Morbus	699	1 in 172·82.
Infantum	4870	1 in 24·77.
Diarrhœa	1606	1 in 75·14.
Dysentery	3368	1 in 35·83.
Marasmus*	4384	1 in 27·52.
Teething	2108	1 in 57·25.
Worms	997	1 in 121·04.
Rupture	121	1 in 997·38.
Liver, Inflammation and Disease	1098	1 in 109·91.
Scirrhus of	115	1 in 1049·42.
Jaundice	323	1 in 373·64.
Genital System.		
Bladder and Kidneys, Inflammation	115	1 in 1049·42.
Gravel or Stone	102	1 in 1183·17.
Diabetes	28	1 in 4310·14.
Mismenstruation	37	1 in 3261·75.
Childbed and Puerperal Fever	1038	1 in 115·3.
Inflammations.		
Quinsy	261	1 in 462·39.
Sore-throat	486	1 in 247·49.
Rheumatism	195	1 in 618·89.
Gout	66	1 in 1828·54.
White Swelling	59	1 in 2045·49.
MorbusCoxarius (disease of Hip)	2	1 in 603·42.
Abscess	301	1 in 400·91.
Ditto, Lumbar	42	1 in 2873·42.
Tumour	40	1 in 3017·4.
Ulcers	185	1 in 652·34.
Carbuncle	26	1 in 4641·69.
Caries	41	1 in 2943·51.
Mortification	447	1 in 269·98.
Cancer	358	1 in 33·1.
Scurvy	21	1 in 5746·9.
Rickets	26	1 in 4641·69.
Scrofula	329	1 in 366·78.
Lues Venerea	372	1 in 324·47.
Fracture	115	1 in 1049·42.
Old Age	3532	1 in 34·19.
Drinking Cold Water	274	1 in 440·45.
Intemperance and Delir. Tremens	1728	1 in 69·84.

* Under deaths from Marasmus are included deaths reported by decay, debility, tabes mesenterica, and atrophy.

Diseases.	Total Deaths.	Comparative Mortality from each Disease.
Suicide . . .	617	
Unknown Disease .	2472	1 in 48·82.
Casualties.		
Including reports as Burned, Drowned, Frozen, and Killed	4200	
Malformation* . .	51	1 in 2366·35.
Deaths in each year . .	2297	
Still-born and Premature .	6925	

The whole number of interments for these thirty-two years amounts to 132,426; of which are classed as men, 37,585; as boys, 36,129; women, 28,676; girls, 30,036:—or, males, 73,714; females, 58,712. This amount includes 6,925 still-born, which, in estimating the mortality under five years of age, have been excluded, making an excess of mortality of males of 15,002, or 11·32 per cent. The mortality at certain ages is divided into ten periods, as follows:

	per Cent.	Total Deaths.
Under 5 years............	39·46	49531
Between 5 and 10 years...	4·	5023
10 and 20	4·7	5899
20 and 30	13·249	16628
30 and 40	13·462	17095
40 and 50	9·969	12512
50 and 60	6·23	7785
60 and 70	4·29	5385
70 and 80	2·82	3541
80 and upwards..	1·674	2102
Total	......	125,501

The population of this city has risen, during this time, from 75,770 to 270,089; viz.

In 1805, it was 75,770
In 1810 96,373
In 1815 100,619
In 1820 123,706
In 1825 166,086
In 1830 197,112
In 1835 .... 270,089.

The rate of mortality, according to the population (still-born excluded), being

In 1805, as 1 to 32·98
In 1810, as 1 to 46·49
In 1815, as 1 to 41·83
In 1820, as 1 to 37·19
In 1825, as 1 to 34·78
In 1830, as 1 to 37·92
In 1835, as 1 to 40·87.

Remarks on the preceding Table. By C. A. Lee, M.D.

From this table we are able to learn, with considerable precision, what diseases have increased and what diminished in mortality.

* Malformation includes returns as such, and spina bifida.

In the first place, diseases of the brain seem to have increased nearly fourfold in proportion to the population. Apoplexy nearly one third in the same ratio. Deaths by convulsions, chiefly under one year, have increased nearly threefold; and those from croup, hooping-cough, and inflammation of the lungs, have nearly doubled; while deaths from consumption have increased a little over one third in proportion to population.

Fevers, excluding scarlet and puerperal, have increased only nine per cent.; while scarlet fever has risen from 4 in 1804, to 579 in 1836. The mortality from small-pox is rather less in proportion to the population than in 1801; but measles, which at that time was a rare disease, has now become frequent and fatal, having carried off nearly 500 children in 1835. While inflammation of the stomach and bowels has somewhat increased, cholera infantum is less fatal, by one third, than it was thirty years ago. The same is also true in relation to dysentery and marasmus. As there can be no doubt that, owing to the great extension of the city and the consequent deterioration of air and water, these diseases are more prevalent than they were at that period, it may be reasonably inferred that their diminished mortality is owing to their being treated with greater skill and success than formerly.

Diseases of the genital system have not kept pace with the increase of population, although we now number more than four times the inhabitants we did in 1805; yet the deaths from stone in the bladder are not more numerous than they were at that time, indicating, as we think, more successful methods of cure; for none can deny that the same causes still remain in operation.

Diseases of the heart appear to have increased very much within the last few years. From 1804 to 1834, but nine cases of death from diseases of the heart were reported; since which period they have averaged over twenty annually. Whether this is owing to those causes of mental excitement which have agitated in a remarkable degree all classes of society for the last few years, it may not be possible to determine with certainty; yet no one can doubt that they have exerted considerable influence.

Puerperal fever has kept an even pace with the population, and deaths in childbed have diminished, owing, doubtless, to a better acquaintance with the obstetric art. The whole number of deaths from puerperal fever and in childbed, for thirty-two years, is 1,038; this bearing to the whole number of deaths the ratio of 1 to 115. When we consider the immense number of births which have occurred in this city during the same period, ranging from 2 to 300,000, we shall find that the chances of a fatal result in parturition are small indeed. This result, however, is strikingly at variance with the statement in the Transactions of the Statistical Society of London, viz. that, of 448,356 females who died in the Prussian States in the course of fifteen years, between the ages of fourteen and forty-five, 70,215, or nearly one sixth, died either immediately in the act of delivery or in childbed; and, of the infants born, 1 in 108 cost the mother her life.

The diseases included under the general head of inflammations do not appear to have increased. The deaths from rheumatism have been but 195 during the whole period, and from gout 66. Cancer, scrofula, and syphilis have been of nearly equal fatality, averaging 350 each. The mortality from the venereal disease has, indeed, diminished more than 50 per cent. Whether this indicates a better state of the public morals or an improved *methodus medendi*, we leave for others to judge. The deaths from old age amount to 3,532; being in the ratio of 1 to 34 from deaths from all diseases. While the mortality from drinking cold water has diminished fourfold, that from drinking ardent spirits has increased in the same proportion. The deaths from suicide, in 1805, were 26 in number; in 1836 but 33, instead of 100, as they should have been, to have kept pace with the population. But, perhaps, the most important fact contained in this table is the vast increase in the number of the stillborn and the premature, rising from 47 in 1805 to 506 in 1836, being nearly fivefold in proportion to population. Various causes have been assigned for this increase, none perhaps more plausible than those given by the late talented physician, Dr. Avery, and published in a late Number of this Journal. But, in addition to these, which, it will be recollected, operate

chiefly in lowering the standard of female health, thus causing the premature expulsion of the fœtus, there are others, of no slight efficiency; such as the general use of ergot, particularly in difficult and protracted cases of labour. We have witnessed many cases where the death of the fœtus has been caused by the use of this article, and where life might, in all probability, have been saved by an early and judicious use of the forceps. A curious fact connected with this subject is that the number of male stillborn is nearly double that of the female in 1837; the former being 349, and the latter 193. *Amer. Jour. of Med. Sc. May,* 1838.

III. THE BRITISH JOURNALS.

(FOR THE QUARTER ENDING NOVEMBER 30, 1838.)

ANATOMY AND PHYSIOLOGY.

On the Mechanism of Bruit de Soufflet, &c. By D. J. CORRIGAN, M.D.,
Physician to Jervis-street Hospital, Dublin.

[IN a former Number (Vol. III. p. 257,) we gave an account of Dr. Corrigan's very interesting researches on this subject. The object of the present paper is to corroborate his previous conclusions as to the cause of this phenomenon, and to examine the validity of the opinions advanced by Drs. Williams and Todd, in their Report on the Sounds of the Heart, which we published in our tenth Number. The following brief abstract contains the views of both parties.]

The question at issue between the London committee and me is not a mere abstract question, but one of very direct practical bearing; for it is obvious that, if their report and theory were received as correct, the student and the practitioner would be always led to associate the presence of *bruit de soufflet* with increased resistance, or impediment, or obstruction; and a line of practice might be adopted the very worst adapted for many of those cases in which the sound is heard, and in which the indication very often is, not to lessen force or strength, but to maintain and increase both. The question at issue between us is now within a narrow circle. The experiments and observations are admitted on both sides. Their conclusion is, that "a certain resistance or impediment to a liquid current is the essential physical cause of all murmurs produced by the motions of fluids in elastic tubes. That any condition of the walls of the tube beyond the obstructing point is not, as it has been supposed, essential to the production of these sounds, &c."

My conclusions are, that the conditions necessary to the production of sound are, "1st. A current-like motion of the blood (instead of its natural equable movement,) tending to produce corresponding vibrations in the sides of the cavities or arteries through which it is moving; and, 2dly, a diminished tension of the parietes of the arteries or cavities themselves, in consequence of which these parietes are easily thrown into vibration by the irregular current of the contained fluid; which vibrations cause on the sense of touch, 'fremissement,' and on the sense of hearing, 'bruit de soufflet.' "

The reader can, therefore, now judge for himself of the accuracy of our respective conclusions.   *Dublin Journal. November,* 1838.

*On the Structure of the Teeth, the Vascularity of those Organs, and their
Relation to Bone.* By JOHN TOMES, Esq.

THE microscopical examinations which the author has made of the structure of the teeth of man and various animals lead him to the conclusion that their bony portions are formed of minute tubes, disposed in a radiated arrangement, in lines proceeding everywhere perpendicularly from the inner surface of the cavity con-

taining the pulp. These tubuli are surrounded by a transparent material, which cements them together into a solid and dense mass. He finds, by applying the test of muriatic acid, that carbonate as well as phosphate of lime enters into their composition. In man, the tubuli, during their divergence from their origin at the surface of the central cavity, send off a number of very minute fibrils; and on approaching the enamel or the granular substance, which cover respectively the crown and the fangs of the tooth, the tubuli divide into smaller ones, which freely anastomose with one another, and then either are continued into the enamel, or terminate at the boundary between these two substances. Various modifications of this structure, exhibited in the teeth of different animals, in the class mammalia and fishes more particularly, are minutely described. The granular substance appears to be composed of irregularly shaped osseous granules, imbedded in the same kind of transparent medium which cements the tubuli together. External to the granular portion, the author finds another substance entering into the formation of the simple tooth, and commencing where the enamel terminates; and which he describes as beginning by a thin and transparent layer containing only a few dark fibres, which pass directly outwards; but assuming, as it proceeds towards the apex of the fang, greater thickness and opacity, and being traversed by vessels.

External to the enamel, and in close connexion with it, in compound teeth, is situated the crusta petrosa, a substance very similar to the bony layer of the simple tooth. It contains numerous corpuscles, and is traversed by numerous vessels entering it from without, and anastomosing freely with one another, but terminating in its substance. These investigations of the structure of the different component parts of teeth furnish abundant evidence of their vascularity and consequent vitality.   *Proceedings of the Royal Society.* 1837-8. No. 34.

On the Decussation of Fibres at the junction of the Medulla Spinalis with the Medulla Oblongata. By JOHN HILTON, Esq.

THE author first alludes to what usually happens in affections of the brain, namely, that the loss of voluntary power and of sensation manifest themselves in the opposite side of the body to that in which the cerebral lesion exists, a fact which has been attempted to be explained by the crossing of the fibres at the junction of the medulla oblongata with the anterior or motor columns of the medulla spinalis; but such a structure, he observes, affords no explanation of the loss of sensation. The author then, referring to the communication of Sir Charles Bell to the Royal Society, in the year 1835, describing a decussation connected with the posterior columns, or columns of sensation, mentions that the accuracy of these dissections was doubted by Mr. Mayo and other eminent anatomists. The author proceeds to state that the symptoms of cerebral lesion do not always take place on the opposite side of the body to that in which the lesion of the brain exists, but that they occur sometimes on the same side; that the loss of power and of sensation, although confined to the same side, may exist in either the upper or the lower extremity; but that both are not necessarily implicated; and that, in fact, cases occur where there are marked deviations from what may be considered the more common occurrence. Having observed such cases, and not being aware of any satisfactory explanation, the author examined with care the continuation upwards of the anterior and posterior columns of the spinal marrow into the medulla oblongata and found that the decussation at the upper part of the spinal marrow belonged in part to the columns for motion, and in part to the columns for sensation; and further, that the decussation is only partial with respect to either of these columns; thus elucidating by the observation of the actual structure what before appeared very unsatisfactory in pathology, and anomalous in disease.

The paper is illustrated by drawings made from the dissections of the author.
                    Proceedings of the Royal Society. 1837-8. No. 34.

On the Causes, Nature, and Prevention of Small-pox.
By Francis Eagle, Esq. Surgeon, London.

[This paper contains some interesting facts, but more matters of hypothesis and inferences of doubtful authority. The subject, however, at this moment so much engages the attention of the profession that we must find room for the *conclusions* which he draws from the facts and reasonings contained in his essay. It is but justice to Mr. Eagle to state that he regards these conclusions not as all positive, but " subject to the test of experience and further facts."]

First, and principally, that the opinion that small-pox has had but one individual and solitary origin, whence all mankind became infected, is most illogical; that it is founded on our ignorance, and not on facts; that it is negative and not positive; that it is opposed by daily experience of the phenomena of this disease, its rise, its progress and decline, its frequent occurrence where no contagion can possibly be traced, and its deviation in a direct ratio with the causes which produce it; that it is also opposed by the foregoing evidence of its identity, in causes and nature, with cow-pox, which latter disease originates *de novo* frequently, &c.

Secondly. That cow-pox and small-pox are identical:—1. In their causes. 2. In their nature (subject to the law of physical condition). 3. In their effects.

Thirdly. That the circumstance of one being a local the other a general exanthematous affection, is the result of the different anatomical construction of the two animals in which they originate, according to the law which governs the actions of all specific poisons.

Fourthly. That cow-pox, fresh from the cow, is more efficacious than vaccination as now employed.

Fifthly. That the preservative power is temporary and not permanent, preserving the constitution only up to the period of puberty.

Sixthly. That cow-pox, fresh from the cow, and natural small-pox, exercise identical preservative influence over the occurrence of secondary small-pox.

Sevnethly. That the two grand epochs for vaccination are childhood and puberty.

Eighthly. That the inference that the vaccine matter has weakened by time is by no means a necessary or even a fair logical induction, since there is considerable foundation for the opinion that, as all other epidemics are constantly altering their type, deviating in a direct ratio with their causes, the small-pox also does the same.

Ninthly. That the method of reproducing cow-pox consists in bringing the animal under the influence of the same circumstances which are peculiar to the locality of its origin—the dairy counties; namely the early separation of its young.

Lancet. October 27, 1838.

New Casts for Anatomical Specimens.   By W. Whitehouse.

[Mr. Whitehouse received the silver medal of the Society of Arts for this mode of casting, which he describes as follows:]

The preparation (whether in the recent state, or having been preserved in spirit or in solution of any sort) is wiped nearly dry, and then arranged, so as best to display its peculiarities, upon a wooden slab of the required size and shape, this having been previously saturated with water, and wiped nearly dry.

Having been slightly fastened to this slab by means of pins, and all those parts in the subsequent relieving of which any difficulty is to be apprehended having been supported or filled up with moistened linen rag, the whole is immersed slowly and gradually (at an angle of forty to forty-five degrees) in the melted composition. This consists of Burgundy pitch and pure bees' wax, each one pound; yellow resin, two oz.; mutton-suet melted and strained, six oz. This should be kept in a fluid state, and at a regular temperature, by means of a lamp placed under the containing vessel. Being withdrawn for a few seconds, it is again and again dipped so as to produce a mould of suitable thickness. This being effected, it is plunged into

cold water, when the mould becoming hard, the pins may be easily withdrawn, and the slab and preparation readily taken out of the mould.

The mould is then to be carefully filled with the finest plaster of Paris in the usual way, and in half an hour after this has set, it may be placed for a few minutes in water a little below blood-heat; by this means the mould becomes soft and pliable, and may be easily torn off, bit by bit, in such a manner as to leave uninjured the most delicate part.

Immediately after the removal of the mould, the cast should receive two or three coats of the finest olive or almond oil; when this has been absorbed, we may begin at once to colour from nature, using at the same time a small quantity of fresh ox-gall.   *Medical Gazette.   September* 29, 1838.

An Account of some Experiments on the Blood in connexion with the Theory of Respiration. By JOHN DAVY, M.D., F.R.S., Assistant Inspector of Army Hospitals.

The author has investigated, experimentally, several of the important questions connected with the theory of respiration and of animal heat; and arrives at the following results. He finds that the blood is capable of absorbing oxygen both from atmospheric air, and from oxygen gas, independently of putrefaction. After blood has been agitated in common air, a trace of carbonic acid, not exceeding one per cent., is found in the residual air; but when pure oxygen is employed, no carbonic acid can be detected in it by the most carefully conducted trials. When pure carbonic acid is brought into contact with blood, or serum, over mercury, and moderately agitated, the absorption of gas exceeds the volume of the fluid. Both arterial and venous blood are rendered very dark, and serum more liquid by the absorption of this gas to saturation. Serum, in its healthy state, is incapable of absorbing oxygen, or of immediately furnishing carbon to form carbonic acid: and after it has absorbed carbonic acid, only one tenth of the absorbed gas is expelled by successive agitation with atmospheric air, or with hydrogen. The author is inclined to think that the alkali in the blood, in its healthiest condition, is in the state of a sesquicarbonate. In the majority of trials manifest indications of the disengagement of air from blood *in vacuo* were obtained: but as it occasionally happened that no air could be thus extricated, the author is induced to believe that the quantity of air contained in the blood is variable; and he has found this air to consist solely of carbonic acid gas. It would also appear, from the experiments detailed in this paper, that a portion of oxygen exists in the blood, not capable of being extracted by the air-pump, yet capable of entering into combination with nitrous gas; and existing in largest proportion in arterial blood. The absorption of oxygen by blood is attended with an increase of temperature.

The experiments of the author tend to show that the lungs are absorbing and secreting, and perhaps also inhaling organs, and that their peculiar function is to introduce oxygen into the blood, and separate carbonic acid from the blood; and they favour the idea that animal heat is owing, first, to the fixation or condensation of oxygen in the blood in the lungs during its conversion from venous to arterial; and secondly, to the combinations into which it enters in the circulation in connexion with the different secretions and changes essential to animal life.
                    Proceedings of the Royal Society.   1837-8.   No. 34.

On some remarkable and hitherto unobserved Phenomena of Binocular Vision. By CHARLES WHEATSTONE, Esq., F.R.S., Professor of Experimental Philosophy in King's College, London.

THE author first shows that the perspective projections of an object upon the two retinæ differ according to the distance at which the object is placed before the eyes; if it be placed so distant that to view it the optic axes must be parallel, the two projections are precisely similar; but if it be placed so near that to regard it the optic axes must converge, a different perspective projection is presented to

each eye; and these perspectives become more dissimilar as the convergence of the optic axis becomes greater. Notwithstanding this dissimilarity between the two pictures, which is in some cases very great, the object is still seen single; contrary to the very prevalent metaphysical opinion, that the single appearance of objects seen by both eyes is owing to their pictures falling on corresponding points of the two retinæ. After establishing these principles, the author proceeds to ascertain what would result from presenting the two monocular perspectives, drawn on plane surfaces, to the two eyes, so that they shall fall on the same parts of the two retinæ as the projections from the object itself would have fallen. Several means are described by which this may be accomplished; but the author especially recommends for this purpose an apparatus called by him a stereoscope, which enables the observer to view the resulting appearances without altering the ordinary adaptation of the eyes, and therefore without subjecting these organs to any strain or fatigue. It consists of two plane mirrors with their backs inclined to each other at an angle of 90°, near the faces of which the two monocular pictures are so placed that their reflected images are seen by the two eyes, one placed before each mirror, in the same place; the apparatus has various adjustments by means of which the magnitude of the images on the retina may be varied, and the optic axis differently converged. If the two monocular pictures be thus presented one to each eye, the mind will perceive, from their combined effect, a figure of three dimensions, the exact counterpart of the object from which the pictures were drawn; to show that this curious illusion does not in the least depend on shading or colouring, the illustrations principally employed are simple outline figures, which give for their perceived resultants skeleton forms of three dimensions. Each monocular outline figure is the representation of two dissimilar skeleton forms, one being the form which it is intended to represent, and another, which Professor Wheatstone calls its converse figure. Viewed by one eye alone the outline may with equal ease be imagined to be either; but when the two monocular pictures are viewed one by each eye, the proper or the complemental form may be fixed in the mind; the former, if the right and left pictures be presented respectively to the right and left eyes; and the latter, if the right picture be presented to the left eye, and the left picture to the right eye. Many new experiments are then detailed, and a variety of instances of false perception of visual objects, some new, others formerly observed, are traced to these principles; among others, the well-known apparent conversion of cameos into intaglios. The author next proceeds to show that pictures similar in form but differing in magnitude within certain limits, when presented one to each eye, are perceived by the mind to be single and of intermediate size; and also that when totally dissimilar pictures, which cannot be combined by the mind into the resemblance of any accustomed objects, are presented one to each eye, they are in general not seen together, but alternately. The memoir concludes with a review of the various hypotheses which have been advanced to account for our seeing objects single with two eyes; and the author states his views respecting the influence which these newly-developed facts are calculated to have on the decision of this much debated question.

Proceedings of the Royal Society. 1837-8.   No. 34.

Cases of Muscæ Volitantes; with Remarks on their Proximate Cause.
By W. C. WALLACE, M.D., Oculist, New York.

[THIS is an ingenious and well-written paper, evidently the production of a man of science. Our limits only permit us to extract one of the cases and that portion of the remarks which contain Dr. Wallace's own views.]

CASE. A very intelligent gentleman consulted me some time ago about a network which appeared before his eyes, and impeded vision. While describing his complaint he drew with his pencil a representation of part of the vascular coat of the retina, as perfectly as if he had had a preparation of the membrane before him for a copy. I took an unusual interest in the case from the drawing, and obtained the following account of it:

"The appearances before my eyes are drawn as correctly as I am able; they do

not appear stationary, for when I suddenly throw my eyes up they will also go up, and appear to rise above the object upon which I fix my sight; they then move slowly downward, and sink below the sight, sometimes a little on one side, and at other times exactly in the way, so as to cover a letter or figure at which I may happen to look. I can still see the object, though imperfectly, as if through thin gauze or something of the kind, which dims the sight a little. When they get on one side of the sight, and I attempt to turn my eyes to get a more perfect view of them, turning my eyes appears to turn them also, and they keep at about the same distance. When my eyes are open they do not appear so large nor so plainly as they do when I partly close my eyes. When I fix my sight upon an object, and look steadily at it for a moment or two, without moving my eyes, they will disappear; but the least motion of the eyes will bring them back again as plainly as ever. I have two or three different times noticed a kind of motion, as if caused by hundreds of small insects darting to and fro, when I looked up in the air, in strong day-light. The distance of the net-work appearance seems to be regulated by the distance of the objects at which I look. If I look at an object half a mile off they seem considerably farther from me than they do when I look at an object which is only two or three feet distant. The appearances are worse after a hearty dinner or loss of sleep, and they trouble me least when I feel otherwise well."

When the convex surface of the retina is exposed under water, and scratched with a scalpel, a membrane of great delicacy may be separated, and turned over with the assistance of a camel's hair pencil. This is the coat of Jacob. When the same preparation is allowed to putrefy, and the nervous matter washed away with a camel's hair pencil, the vascular membrane may be exhibited. The ramifications of the blood-vessels in this membrane resemble those of the veins of a leaf after the soft part has been eaten away by insects, and by their intertexture they form a semi-opaque screen, on which is received the image of external objects; just as the ground of a camera obscura, or the screen of a magic lantern.

The nervous matter may be divided into two layers. By allowing an eye to macerate in alcohol, for the purpose of preventing the retina from collapsing when the anterior half of the eye is cut off, and pouring upon the retina thus exposed a watery solution of corrosive sublimate, the fibres may be seen lying beneath the vascular membrane, when they are separated from each other by a camel's hair pencil. In young animals, especially in the calf, the fibres are more easily exhibited than in those which are old. In the human eye, some of them converge round the central foramen. By pouring upon an eye exposed in the same manner an alcoholic solution of corrosive sublimate and muriate of ammonia, the fibrous coat becomes so compact and hard that it may be torn off with forceps, and a layer of globules will be brought into view. These globules are kept in place by the coat of Jacob already described.

The retina, then, consists of four layers—a vascular, a fibrous, a globular, and a serous.

By this exposition of the retina we may account for the various appearances of muscæ volitantes. I have occasionally, when entering an ordinarily lighted room, after a full meal, and exposure to a bright light, witnessed glimmerings like a net-work, which, from its resemblance to the vascular coat, left no doubt in my mind that the blood-vessels of the retina were visible. At other times, in the same circumstances, there was a twisted tube, or a chain of beads, as if there had been an error loci of one of the carved fibres of the retina; or there was a cloud of globules, sometimes packed together, but more frequently separated, and floating in all directions. Each globule was visible for a considerable time, and repeatedly re-occupied the same space. When clustered together, they had a great resemblance to the globules of the retina.

From the similarity of the drawing of the floating network, in Case 1, to the vascular coat of the retina, I am persuaded that any person who has seen both will have no hesitation in locating the disease: and if the network, curved filaments, and globules, appear to others as they do unto me, the various muscæ will be ascribed to affections of the structure which they resemble.

Med. Gazette. October 20, 1838.

PATHOLOGY, PRACTICAL MEDICINE, AND THERAPEUTICS.

Case illustrating the Origin of the Optic Nerves. By G. KENNION, M.D.

[THE following case is interesting, because, as Dr. K. observes, although the connexion of the optic nerves with the corpora quadrigemina is generally admitted, pathological facts illustrating this are not abundant.]

A gentleman, æt. sixty-six, had been gradually getting more and more blind, and when first seen by Dr. K. the symptoms were as follows:—There was complete amaurosis, with dilated and insensible pupil on the right side, and very indistinct vision (almost amounting to amaurosis) in the left eye. There was much dulness, and at the same time anxiety, in his countenance; his mind was much confused; his answers sometimes rambling: and his utterance slow and heavy. His hearing, and all his other senses, were perfect; he had the full use of all his limbs, and he never had a fit of any kind. There was no tenderness on pressing the scalp in the region affected; the pain was not influenced by any variety in his position (as erect, or horizontal), but the least quantity of wine or beer rendered it insupportable; pulse seventy-six, small and feeble; action of the heart natural; appetite tolerable; tongue white, and somewhat furred; he complained very much of a bitter taste in his mouth; the bowels were in general regular. Occasionally there was some irritability about the neck of the bladder. He stated that he had never had any fall or blow on the head.

The patient died within two months from this time, having had several fits of an epileptic character, during the ten days preceding his death.

Sectio Cadaveris, forty-two hours after death. The calvarium was with much difficulty removed, on account of its firm adhesion to the dura mater, the vessels of which were in a state of considerable congestion; and on the external surface of this membrane, in the occipital region, there was an effusion of about four ounces of blood. On slicing the right hemisphere of the brain from above downwards, the anterior part of the roof of the lateral ventricle appeared healthy, but the posterior portion was much softened, though not discoloured. The same was found on the left side, but to a greater degree. Behind the third ventricle, and pressing on the corpora quadrigemina, and also partially on the cerebellum, there was a tumour the size of a walnut, of a cartilaginous nature, but which in some parts was soft and easily broken up. It was partly surrounded by a softish substance, having some points of bloody infiltration. This extended for some distance into the left hemisphere, on which side there was also about ʒjss. of an amber-coloured gelatinous effusion lying over the choroid plexus, and in the posterior cornea of the lateral ventricle.

The other cavities of the body were not allowed to be examined.

Med. Gazette.   September, 1838.

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Analytical Essay on Irregular and Aggravated forms of Hysteria. By THOMAS LAYCOCK, House-Surgeon to the York County Hospital.

[THIS is the continuation but not the conclusion of former papers on hysteria, and is marked by the same elaborate research and ingenuity. We refer to it chiefly with the view of recommending it to the notice of our readers. It is not susceptible of abridgment. We quote a single passage respecting the vicarious discharges of urine.]

If we examine into the question of erratic urinary discharge as a matter of fact, the proof that it has occurred is rendered as complete as possible by the following table of recorded instances.

	Vomit.	Stool.	Ears.	Eyes.	Saliva.	Nose.	Mammæ.	Navel.	Skin.	Total.
In cases in the selection,	19	2	2	1	0	2	3	5	5	39
In cases from authors, .	14	18	2	3	5	1	1	29	12	85
Total . .	33	20	4	4	5	3	4	34	17	124

Cases are omitted under the head "stool" in which there was a known communication between the rectum and bladder; in two of the number given it was ascertained that no such communication existed. The numbers in which the discharge took place from the umbilicus are not very precise. But if we suppose, that in the whole of the cases under the heads of stool and navel, there was a direct communication with the bladder, ureters, or kidneys, we have still seventy instances to account for; were they all feigned?

Haller thought that almost all secretions may, under the influence of disease, be formed by each and every secreting organ, an opinion which I think will be found to be consistent with facts.   *Edin. Journ.   Oct.* 1, 1838.

Some Remarks on the Hooping-Cough, communicated in a Letter to Dr. R. J. Graves. By Dr. H. C. LOMBARD, of Geneva.

[THIS is a valuable paper in relation to the statistics, pathology, and treatment of hooping-cough. Our limits will only permit us to extract the portion of it that refers to the use of carbonate of iron in this disease. We may state that since the recommendation of this remedy by Dr. Steymann we have ourselves employed it in a few cases with much benefit, and have received the same account of its effects in the hands of some of our friends.]

I come now to my specific, or rather to the remedy advised by Dr. Steymann; as the best anti-spasmodic in hooping-cough. Dr. Steymann had advised to give from four to ten grains of subcarbonate of iron in the twenty-four hours; he gave as a rule to increase one grain for each year, so that a child six years old was to take six grains in the day; but from the beginning I found that dose quite inadequate, and I increased it to twenty-four, and even thirty-six grains in young children. I have given it either with water and syrup or mixed with a cough mixture. It has never produced any inconvenience, on the contrary, I have found that all the children treated after this method were much less weakened, and recovered faster than with all other remedies. The proofs of the advantageous effects of the subcarbonate of iron have been so numerous that I can scarcely enter into the detail; however, I may give a few facts to corroborate my assertion. In a child, four years old, I gave the subcarbonate of iron, and the fits which in the preceding week had been 101 in number were reduced to sixty-six in the following week. In a weak and debilitated boy, aged seven years, the powder of belladonna had proved quite useless, when I tried the powder of iron, so prompt was the effect, that in a few days the boy was quite cured; the sister of this boy was also cured with great rapidity. A young girl, aged eight years, had eight fits in the day, and after a fortnight they were reduced to two or three very mild fits of cough. A boy, aged six years, having thirty fits of convulsive cough during the day, when he began the subcarbonate of iron, after one week the daily number was reduced to twenty-one, and in a fortnight, to eleven or twelve fits, much less violent than they were before the treatment. One of our best apothecaries had tried various remedies on his children, who were labouring under a violent attack of hooping-cough, when I advised him to try the subcarbonate of iron; the result was far beyond his and my expectations, as after three days the night fits ceased entirely, and those which occurred during the day were reduced to three or four. The last case of hooping-cough which I have treated lately was of four months' duration, and every thing had proved useless, when I gave the iron powders, which in the space of a few days succeeded in making the cough less and less.

In fact, I think I may assert with security, that the subcarbonate of iron enjoys a remarkable property to make the fits less violent, to diminish their number, and after a certain number of days to cure entirely the hooping-cough. It enjoys, besides, the advantage of strengthening the little patients, and to give them the force to resist a complaint which sometimes lasts some weeks, and generally leaves the patients weak, low, and exhausted. In some of those who have taken it, I have often seen during the first days a temporary increase of the cough, but it always subsided after two or three days, and did not prevent the good effects of

the medicament. The good effects obtained by the use of the iron powders are easily explained by its anti-periodic and anti-neuralgic properties, and it shows *a posteriori,* how much the hooping-cough resembles a true neuralgic, or at all events a true nervous disease.

<div align="center">*Dublin Journal of Medical Science. November,* 1838.</div>

On the use of Oil in Colica Pictonum. By J. J. BIGSBY, M.D., Newark.

[WE extract the following case as much to exhibit the excellent sense and judgment of the physician, as to put our readers in possession of what may really be a valuable remedy in a most troublesome disease.]

The subject was nineteen years old, stout, an apprentice to a painter. It was his second attack, the first being about a year ago, at Nottingham. He was then attended by several medical men, on account of the severity and obstinacy of the disease.

The symptoms in the present attack were those commonly observed.

Large quantities of calomel, solid opium, laudanum, castor oil, several bulky clysters (the last containing Sp. Tereb. ℥ij.) were given during the twenty-four hours succeeding my first visit, but without much effect on the complaint. Some relief to the pain, however, was derived from a sinapism to the whole abdomen. Very little blood was drawn.

At this time I asked the patient what had done him good on the previous occasion. He said, a quantity of goose grease and yeast; that this procured an evacuation when all other remedies had failed. I immediately ordered him to take about four ounces of the mixture in equal proportions; and a hard motion was the speedy consequence, together with considerable subsidence of the colic. Another dose was given the next day with similar good effect, and he has gradually recovered. He had been ill more than a fortnight without advice.

Moderate salivation was established in forty-eight hours after beginning the use of calomel and opium, but seeing that ease was procured before this period, and that these medicines had, in all probability, been unavailing in the first attack, I attribute the recovery solely to the yeast and melted fat.

My inference from this case is, that olive or castor oil, in large quantities, either or both by mouth and per rectum, should be made more prominent in the treatment of this frightful, but not often fatal, disease. The oils, I understand, are employed largely in Sheffield; but little is said about them in books.

<div align="center">*Med. Gazette. November* 10, 1838.</div>

Contributions on Intra-uterine Pathology. Part I. Notices of Cases of Peritonitis in the Fœtus in Utero. By JAMES Y. SIMPSON, M.D., Lecturer on Midwifery.

[THIS is such a communication as might be expected from the author of the admirable essay on the Diseases of the Placenta. It is well deserving the attention of pathologists; but we must refer them to the original, as we can only give a meager outline of the subject in this place.

An account is given, in all, of twenty-four cases, nearly one half of which came under Dr. Simpson's own notice: three fourths of them were acute. These cases amply establish the fact of the fœtus being liable to peritonitis, as none were admitted as genuine examples of the disease unless there existed in the peritoneum "one or other of the organic products of inflammation."]

The causes of fœtal peritonitis are divided by Dr. Simpson into those "more particularly referrible to the conditions of the mother," and those "referrible to the conditions of the fœtus." Under the former head it is observed that "in some of the cases the mother had been exposed to severe labour, or fatigue and exposure to cold and moisture, or bodily injury during her gestation; in two cases there existed general ill health during the whole of that period; and in one of these the mother herself was twice attacked with peritonitis during the course of pregnancy. In two

of the cases the mothers had an attack of gonorrhœa during the period of utero-gestation, along with a syphilitic eruption in the one instance, and ulcers in the other. A third confessed that she had suffered from venereal disease; and the line of life pursued by others of the number was such as certainly freely exposed them to syphilitic infection. Indeed, it appears to me highly probable, from the investigations which I have already made upon this point, that a great proportion of those children of syphilitic mothers that die in the latter months of pregnancy may yet be shown to have perished under attacks of peritoneal inflammation.''

Symptoms. In eleven only of the cases have we any account whatever of the condition and feelings of the mother during the period of pregnancy. In four out of these eleven cases nothing seems to have occurred that was calculated to direct the particular attention of the mother to anything peculiar in the condition of the fœtus: in three the cessation, about a fortnight before delivery, of the motions of the fœtus, as felt by the mother, was the only circumstance remembered, and in one of these cases the fœtus certainly continued to live for some time after this occurrence: in another case the motions of the infant became less and less sensible during the last two weeks of gestation: and in the three remaining instances these motions, after being much and morbidly increased for two or three days, ceased entirely, and rather suddenly, at a period varying from eleven and fifteen days to upwards of three weeks before delivery. This last combination of symptoms, namely, a great but temporary increased degree of the fœtal motions, attended occasionally with spurious pains, and followed up by the sudden and final cessation of all perceptible movements on the part of the infant, may, we believe, be not unfrequently noticed in cases of acute and fatal peritonitis of the fœtus; but at the same time it must be held in recollection that this same sequence of morbid phenomena is common to peritonitis, with all those diseases of the fœtus in utero which are similarly acute and fatal in their character; and, consequently, they cannot by any means be held as diagnostic marks of peritoneal inflammation alone.

" When the child has been born alive, but affected with congenital peritonitis, it has sometimes, in the more chronic forms of the disease, been emaciated, but not always so; and, in the more acute cases, when any great degree of change is observed in the condition of the child in regard to its natural condition of fatness and plumpness, we shall in general be justified in ascribing it to other causes besides the peritoneal inflammation, as we know that this disease may even prove fatal without bringing down the state of the little patient in this respect. In several cases the abdomen was swelled and fluctuating at birth; sometimes even tense and tender to the touch. With the abdominal effusion a certain degree of hydro-cele generally exists in the tunicæ vaginales of male infants; and in some there has also been observed a coexistent degree of dropsical swelling in other parts of the body, as in the hands, in the upper extremities and face, in particular, or in the lower extremities and beneath the skin of the whole body.

In two of the cases, the children's skin presented at birth the yellow discoloration of jaundice. In one of them that was dead-born, the liver on inspection was found to be the seat of acute inflammation and commencing purulent infiltration. In the second case the child was born alive and survived.

Again, in other instances of congenital peritonitis, none of the equivocal symptoms here alluded to have been remarked, and the cause of death has only been discovered by the post-mortem dissection.''

Duration. We have as yet but few data on which we can rely with any great degree of certainty for fixing the general duration of attacks of peritonitis in the fœtus. We have enough, however, I believe, to show that, contrary to the surmises of some pathologists, inflammatory action may occasionally proceed with nearly as great a degree of acuteness and severity in intra-uterine life as after birth. In some of the cases of peritonitis that have been related, the plump and unemaciated condition of the fœtus after death affords very strong evidence that the fatal morbid state under which it had suffered had not been long in its duration. In others, those symptoms of increased movement and restlessness in the

fœtus, which indicated the occurrence of acute disease in some part of its system, were only remarked for one, two, or three days before its death; and in one of these cases we have further corroborative evidence of the occasional very acute character of the disease in this circumstance, that the apparent exciting cause of the peritonitis was applied only two days previous to the death of the fœtus, as indicated by a sudden and total cessation in its motions subsequently to a greatly increased degree of them. In two other cases, also, the fœtal movements ceased in the course of a day or two after the supposed exciting cause of the fœtal disease had operated upon the maternal system. Besides, the inspection of the dead body in this and in other instances presented such morbid appearances as corresponded only with those left by the more acute and rapidly fatal forms of peritonitis in the adult. Again, in other cases, the state of emaciation, and hence probably of long-continued disease, combined with the particular appearances found on dissection, do show, in as unequivocal a manner, that in these instances the inflammatory action must have been of a decidedly chronic character."

[We are happy to observe that Dr. Simpson purposes continuing his admirable researches in this curious and obscure region of pathology.]

Edinburgh Med. and Surg. Journal. October, 1838.

SURGERY.

On Lithotrity. By W. Fergusson, f.r.c.s. e., Lecturer on Surgery, and one of the Surgeons of the Royal Infirmary of Edinburgh.

[This is a sensible paper, and is well deserving the attention of practical surgeons. The following extract will show that lithotrity is a less successful operation than is generally believed.]

I shall state briefly the particulars of certain cases which have occurred in my own practice, and the results of a considerable number more where I have had ample opportunities of making myself fully acquainted with the details.

Case i. A stout healthy man, about the middle period of life, underwent repeated operations with the lithotrite, all of which were attended with great pain; and, though at the end of several years no stone could be felt, he was in a worse condition than before coming under the surgeon's hands, in consequence of chronic disease of the bladder, apparently induced by the method of treatment.

Case ii. Mr. J. was operated on several times with very little suffering. After being fourteen days under treatment, only one small fragment could be detected, which, however, could not be readily grasped with the instrument: he went to the country, and shortly after passed a fragment, supposed to be the remainder of the stone. Not long after, symptoms of stone again came on, and, about eighteen months after the first operation, he submitted again to lithotrity, and the operation was performed with apparent success.

Case iii. J. W. submitted to lithotrity, and bore the first operation without much pain. In the subsequent attempts he suffered torment, but, notwithstanding, determined to persist, though it was frequently proposed to perform lithotomy. After repeated operations and great suffering, the bladder seems clear of all fragments; and ever since he has remained in good health.

Case iv. R. B. had suffered from stone in the bladder for forty years, firmly resolved never to submit to lithotomy. He felt anxious to undergo lithotrity, and put himself under my care for that purpose. I made an attempt to seize the stone without success; and, though the smallest possible degree of violence was used, still he suffered excruciating pain, which was followed by a feverish attack that did not leave him for several months, and since then he remained in a very exhausted condition. After his health was somewhat restored, he at last submitted to the operation of lithotomy, and I removed a large mulberry stone, weighing nearly five ounces. He made a rapid recovery.

Case v. The Rev. M. A. subjected himself to lithotrity, but suffered so much

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after the first attempt that it was not considered advisable to proceed. Twelve months afterwards he put himself under my charge, and I removed a small stone by the lateral operation. He made a slow recovery; but, like the patient whose case is last referred to, declared that, in the event of being again the subject of this disease, he would rather submit a second time to lithotomy than to lithotrity.

CASE VI. Mr. M., much against my advice, submitted to lithotrity: the operation, though performed with the least possible violence, was followed with excessive irritation and pain in the bladder, which continued for the next twelve hours, but was subdued by powerful opiates. In thirty-six hours the pain returned, and continued without intermission until death, which happened four days after the operation was done. On dissection, the fragments of a large stone were found in the bladder, and a small one untouched. The prostate gland was enlarged, more particularly the middle lobe. The bladder was sacculated, but there was no trace of any injury having been inflicted on it during the operation. Both kidneys were much diseased in this case, and the psoas muscle on the left side seemed converted into a soft mass resembling coagulated blood.

CASE VII. Mr. C. was severely afflicted with symptoms of stone. He consulted me as to the propriety of lithotrity, but I strongly dissuaded him from it. Shortly afterwards, however, he put himself under the care of a professed lithotritist, who broke the stone on one occasion, but could never induce him to submit to a second operation. He has since then suffered much, and is now in a state of great misery; being, no doubt, in a more deplorable state than before the stone gas broken into fragments.

Many other cases have come under my own knowledge or observation, with which, however, I was not so particularly connected as those referred to above. I shall therefore only mention them in the following list, which will show the result of my experience and knowledge in cases of lithotrity, which have not been described in any accounts on the subject as yet published.

Out of eighteen cases in which lithotrity was performed, six have been cured, seven not cured, and five have died.

In one of the number of cured there are strong reasons to suspect a return of the disease; in another, though no stone can be felt, the patient has suffered almost as much since he was operated on (in consequence of disease of the bladder induced thereby) as he did previous to coming under the surgeon's care. Indeed, in two of these cases only can the operation be said to have been attended with that happy success which has been so generally claimed for lithotrity.

Of the seven not cured, four afterwards underwent lithotomy, of whom one died and three recovered.

This statement, which differs so very widely from those made by the professed advocates of lithotrity, appears somewhat startling, particularly to those individuals who have had no personal experience on the subject, and who may have given implicit reliance to the statement of M. Civiale, that, out of 244 cases, 236 have been operated on with success; and though it is probable that other surgeons in this country might show their experience in lithotrity to be more favorable than some has been, I feel satisfied that, in Scotland at least, the average of success will not stand higher than I have stated above.

Edinburgh Med. and Surg. Journal. October 1, 1838.

On a new Method of treating Burns. By EDWARD GREENHOW, M.D., North Shields.

[THIS is a very important practical communication; and bears likewise, as we shall have occasion to show in our review of Dr. Macartney's recent work, on an important principle in the history of inflammation, which has received, for the first time, due attention from that distinguished teacher.]

It is somewhat more than twenty-five years since I was consulted for a boy, who had fallen with both his arms into a kettle of boiling pitch: the agony he suffered at first was extreme, but, as the pitch became cool, so did the pain abate.

Upon examination, I found his hands thickly coated with pitch, which also had found its way up the jacket-sleeves, and probably also through the texture of the cloth: at all events, the sleeves from the wrists almost to the shoulders were firmly glued to the arms in a solid compact mass. The pitch on the hands, after much trouble, was got off by the free use of sp. terebinthinæ, and they were dressed with ung. resin. flav. cum ol. terebinth.; but with the arms I could do nothing. After vainly attempting to dissolve the hardened mass, I abandoned it in despair, by no means easy as to the result of leaving it alone: however, he made little complaint of the arms, and in the meantime the hands suppurated copiously, sloughs separated, granulations rose, and skin began to form in various points. It was now three weeks since the accident, and there had been no appearance of discharge from the arms, no offensive smell; nothing, in fact, to indicate that any process was going on. At the end of that period, however, I was delighted to find the sleeves of the jacket begin to loosen, and detach themselves from the arms; and in two or three days more I was enabled to rip them up and remove them alto-gether, when, to my surprise, I found the arms perfectly healed, and covered with a new skin; whereas the hands were not entirely healed until a month afterwards. On closely examining the jacket-sleeves, there was found adhering to them a sub-stance resembling thin leather, which I could not doubt was a slough which had separated from the arms: and this had taken place, and the whole healing process had been accomplished without the intervention of suppuration.

This case made a great impression upon my mind, and I endeavoured to devise plans for imitating the coating of pitch, which had so wonderfully healed the burn which it had itself occasioned. In talking the case over with a friend in Newcastle, who was largely engaged in attendance upon collieries, in which cases of burns were of frequent occurrence, we agreed that, on the first occasion that presented itself, instead of dressing, as we had been accustomed, with ung. resin. flav. cum ol. terebinth. spread upon lint, to use the same ointment, melted over the fire, and applied with a brush or bunch of feathers, so as to form a complete coating over the burnt surface. It was not long before an opportunity presented itself of trying this plan upon an extensive scale; for, not many days afterwards, the friend above mentioned was summoned to a colliery where an explosion had taken place, and twenty-nine individuals, men and boys, were brought up, all of them more or less burnt, and many of them extensively and severely: all the brushes and feathers of the village were immediately called into requisition, and with the assistance of the relatives of the sufferers in a very short space of time they were all thickly coated with the ointment: they uniformly expressed themselves as much relieved, and they experienced none of the rigors so distressing after a burn, and the certain prelude to suppuration. The assistants were strictly enjoined to pre-serve the perfect integrity of the coating, by renewing it as often as it became necessary; and the men themselves were cautioned to move as little as possible, that they might avoid rubbing off the coating. It is unnecessary to dwell long upon these cases: they all recovered; many of them without the slightest suppu-ration taking place, and others having it take place only in a very partial degree; and, although the faces of some of them were severely burnt, no suppuration took place in any one of them; and it was only in places where friction could not alto-gether be avoided that suppuration took place at all; and on those parts where sloughs necessarily formed, in consequence of the depth of the injury, the sloughs peeled off like pieces of shrivelled leather, as the surface skinned beneath them.

The result of these cases was most satisfactory, establishing not only the possi-bility of healing burns without suppuration, but also that this was accomplished in a much shorter period than could have been effected by any other mode of treatment; and also that the constitutional irritation bore no comparison to what it would have done had there been a larger suppurating surface: in point of fact, many of these men were burned so extensively that, had suppuration taken place, the probability is that the system would have sustained a shock which would have proved fatal.

Since the period at which this occurred, I have pursued the same plan in the

treatment of burns, and every succeeding year has served but the more to con-
vince me of the advantages it possesses; and the friend I before alluded to never
employed any other mode of treatment up to the end of his life.

[In a subsequent Number of the Gazette (November 3d,) a mode of treatment,
considered by the proposer as analogous, is described by Mr. Leach as having
been employed by him in sixty five cases, with considerable success: this consists
in the use of *treacle* spread, cold, upon fine calico.]

Med. Gazette.   October 13, 1838.

Vesico-vaginal Fistula cured by a new Mode of Operating.   By J. M. COLEY, Esq., Surgeon to the Bridgnorth Infirmary.

[THIS case is extremely creditable to Mr. Coley, and the modification in the
mode of operating proposed by him is worthy of attention; although we cannot but
think the very successful result obtained in his case must have been as much
owing to some happy disposition of the patient's constitution as to the peculiarity
of the operation.   The following is Mr. C.'s statement of the advantages of his
operation, and the history of the case in which it proved so successful.]

The operation is free from the objections connected with Mr. Earle's plan, inas-
much as it requires no previous dilatation of the urethra, and it admits of excision
of the callous edges in the most favorable direction, i. e. upwards upon the in-
strument in the urinary passage; only one operation, if properly executed, is
necessary; and I believe that the patient may be allowed to lie either on the side
or back, instead of the abdomen, as insisted upon by all who have written on
the subject.

CASE. 1835, July 8.   A married woman, ætat. 40, had been labouring under
vesico-vaginal fistula during four months.   The urine was constantly passing
through an opening between the bladder and vagina, three fourths of an inch long,
nearly transverse, and situated just beyond the neck of the bladder.

The patient being placed on a high table, in the same position as for lithotomy,
I introduced into the bladder a wood sound, one third of an inch in diameter, and
the vagina being expanded laterally by assistants, the fistulous opening was
brought into view by means of the sound, which, being depressed at its farther
extremity, readily brought downwards and forwards the bladder and urethra.   I
then, with a scalpel, cut down upon the sound, through the vesico-vaginal
structure, on each side the fissure, and without loss of time passed two ligatures,
by means of a small curved needle, fixed in a suitable direction in a pair of for-
ceps of a peculiar construction, the handles of which were fastened with a sliding
ring.   As soon as the needles were carried through the opening, from side to side,
they were extracted by an assistant, with a pair of pocket forceps; and the divided
parts being accurately brought into contact, I tied the ligatures with the fingers
alone, without any delay or difficulty.   The sound was now withdrawn, and a
silver catheter introduced; when we had the satisfaction of seeing the urine flow
through it, while none escaped by the vagina.   The patient was next placed in
bed, on the side opposite that towards which the opening inclined; the catheter
remaining in the urinary passage.   A bladder was at first attached to this instru-
ment, but, being found inconvenient, the latter was secured by a T bandage, and
the urine permitted to escape on a blanket.   In the course of the night the catheter
slipped from the passage, and was not replaced till the next morning.   The pa-
tient, also, tired of the position in which she was left, became restless, and moved
about in all directions.   Notwithstanding these adverse circumstances, the urine
passed only through the natural channel.

When I visited the patient on the fourth day, I found the catheter had
again escaped from the urethra, and had not been replaced during the last two
nights.   Having laid her on the table in the same position as before, and having
expanded the vagina, and introduced the female catheter into the urethra, I de-
pressed the bladder, and divided the ligatures with a probe-pointed bistoury and a
director bent towards the point.   The threads were then removed with a pair of

common forceps; and, from the view we could obtain, the union appeared to be complete. In order, however, to be satisfied respecting the cure, I left the catheter in the bladder during a quarter of an hour, having previously secured the lower opening with a plug. At the end of this time the plug was removed, and I had the pleasure of seeing the urine flow in a stream, while the vagina remained quite free from that fluid. In order to promote the retentive power of the bladder, I desired that the catheter might remain in the passage, and that the plug may be removed at stated intervals. The woman was also allowed to sit up, walk, or lie down, as she might feel disposed.

On the eighth day I examined the cicatrix again, and found, by passing the catheter in the urethra and the finger in the vagina, that no vestige of the fistula remained. As the woman had been very impatient, and had retained the instrument only occasionally in the passage, I desired that it might be discontinued.

On the sixteenth day she rode to Bridgnorth, a distance of seven miles from her residence. At that period she had so far regained the power of retaining the urine, that she could pass three ounces at a time. It now and then escaped involuntarily, particularly during the night; and she did not recover the retentive faculty of the bladder until the end of five months after the operation.

Lancet.   October 6, 1838.

Case of Strangulated Mesenteric Hernia.   By R. Ranking, Esq., Hastings.

[This is one of those cases of internal strangulation, so generally fatal, which are so well and fully described by Rokitanski, in our third Volume, p. 495. The symptoms in Mr. Ranking's case were those of hernia. The following is the account of the appearances found on dissection:]

I found that the mesentery had been separated from its attachment to the under surface of the bowel for the space of an inch and a half. The loop thus formed was further diminished by the intestine taking a turn upon itself, so as to convert the loop into a figure of 8. Through one of these smaller loops a knuckle of intestines, six inches long, had passed, and become tightly strangulated. There were thus two distinct points of strangulation; one formed by the twisting of the intestine upon itself, the other by the passage of the knuckle of intestine through the loop. Both strangulations were so perfect that air could not be made to traverse them without great difficulty. The edges of this laceration of the mesentery were smooth, and did not exhibit any trace of effusion of blood. The intestines below the stricture were closely contracted and empty.

Med. Gazette.   November 3, 1838.

Simple Mode of dilating the Urethra.   By A. L. Wigan, Esq., Brighton.

Being called to a little boy, about seven years of age, labouring under suppression of urine, I found him in a state of agony and spasm really alarming. On examination, I perceived in the urethra, close to the pubes, a stone about the size of a small French-bean. The efforts to force it onwards were most violent, and likely to lead to rupture of the urethra, if not soon relieved. I thought of letting out the stone by an incision, but determined to try first what could be done by dilatation. It was clear that a bougie of sufficient size could not penetrate near enough to the stone to give relief: I therefore inserted the point of a syringe of such a size as could be commanded with one hand, and forced warm water into the anterior portion of the urethra with a steady pressure, and had the satisfaction of producing, in about ten or fifteen minutes, sufficient dilatation to allow the passage of the stone.

Med. Gazette.   October 20, 1838.

MIDWIFERY.

Researches into the History of the Umbilical Cord in the Human Subject. By
F. CHURCHILL, M.D., Physician to the Western Lying-in Hospital, Dublin.

[THIS is a very elaborate and valuable paper, comprising, as the author truly
states, all the facts on record which bear upon the history of the umbilical cord.
It is so condensed as to be unsusceptible of abridgment, and is too long for extrac-
tion. We select that portion of the section devoted to *Prolapsus of the Cord,*
which gives the statistics of its frequency :]

The cord may be prolapsed either at the commencement or during labour.
Though by no means of unfrequent occurrence, its comparative frequency varies
very much.

Mad. Boivin mentions its occurrence 38 times, (25 times before and 13 during
labour,) out of 20,517 cases. Twenty-five cases were turned, and in 13 the forceps
were used. Twenty-nine children were saved, and seven lost; two were putrid.

Mad. La Chapelle met with 23 cases out of 15,652: 13 were treated by the for-
ceps, and 10 by turning: 17 were saved, and 6 lost. M. Baudelocque, out of 17,499
labours, reports 41 cases of prolapsed funis. Dr. Bland gives one case of prolapse
in 1897 cases of labour.

Dr. Merriman gives 11 cases in 2947 labours. Dr. Granville, one case in 640
labours.

Richter, of Moscow, found 4 in 624; and Mazzoni, 18 in 450 cases. Dr.
Clarke, in his Report of the Dublin Lying-in Hospital, met with 66 cases of
prolapsus of the cord in 10,387 deliveries; but the doctor does not believe that all
the cases of this kind were recorded in the registry. Seventeen children were born
alive.

Dr. Collins, in his valuable report of 16,654 cases, occurring in the same hos-
pital between the years 1826 and 1833, states that 97 cases of prolapsed funis
occurred, 12 of them in twin cases (i. e. I presume the cord of one of the twins
prolapsed): 24 children were saved, 7 were putrid.

At the Coombe Lying-in Hospital in this city, Mr. Gregory reported, in 1830,
that, since its commencement in February 1829, 691 patients had been delivered,
among which there were seven funis presentations, four of which were lost.

At the Wellesley Dispensary, Dr. Samuel Cusack reported, in 1830, five cases
of prolapse of the funis in 398 labours; and all appear to have been lost.

In the reports of this institution for the year 1832, 1833, by Dr. Maunsell, there
were two cases of prolapse of the funis in 839 labours. No mention is made of
the result to the children.

In the Western Lying-in Hospital, 31, Arran Quay, Dublin, between Novem-
ber 1, 1835, and December 31, 1837, there were 616 women delivered, and two
cases of prolapsed funis. Both children were lost.

Dr. Beatty reports that six cases of prolapse out of 1182 labours occurred at the
New Lying-in Hospital, between April 1834, and August 31st, 1837. Four of
the children were lost.

If we add these together, they amount to 90,983 deliveries, and 322 cases of
prolapse of the cord, or one in every 282½.

Edinburgh Med. and Surg. Journal.   October, 1838.

TOXICOLOGY.

*On the Poisonous Effects of the Substance used for what is termed
Printing "in Gold."* By GURNEY TURNER, Esq. Surgeon.

[THE following case is interesting and important. We are surprised that the
exact composition of the poisonous powder has not yet been made known in any
of our journals. The practice of "printing *in gold*" ought to be prevented by
authority.]

A lad applied at the General Dispensary for relief of a most distressing itching

of the scrotum. On examining the part, it seemed relaxed and inflamed, the sebaceous follicles considerably enlarged, and round the roots of the hairs were small scabs, caused by his scratching the part, to relieve the tingling sensation. The hair on the scrotum and pubes was of a decided grass-green colour, and though the irritation resembled that produced by the pediculus pubis, I could discover none of these vermin or their ova. On enquiry, the lad referred these symptoms to his occupation at a newspaper office, being engaged in printing the Golden Sun paper—so named from its golden type. It appears this hue is communicated by brushing a fine bronze-coloured powder (composed, according to the workmen's account, of copperas, verdigris, and quicksilver,) over the type, which is first printed in yellow ink. This powder is given to those employed in ounce packets, and about forty hands were thus employed, almost all of whom had been forced after a time to give up this work, some keeping at it only two days; others for a week or more; but all suffering more or less from its effects.

The hair on his head and in the axilla was of the same colour, and he complained of itching in these parts, and about the wrists, though in a less degree, and the hair felt peculiarly harsh, dry, and matted.

He stated that on the third day of being thus employed, he had been seized with vomiting of a green-coloured fluid, and a sensation of heat and constriction in the œsophagus, with pain in the stomach, which he referred to swallowing and inhaling portions of the powder diffused through the air of the room: this was followed by epistaxis, recurring at intervals, itching of the before-mentioned parts, more especially of the pubes and scrotum, tenderness of the epigastrium and bowels, accompanied by loss of appetite and rest.

He had ceased attending the dispensary after about nine or ten days, at which period he was quite well, only that the hair still continued green—but less intensely so.

This case having excited my curiosity, I asked and obtained permission to see the process of printing these papers. They are printed with a yellow ink, composed of size and gamboge, and then handed over to men who, with a common hat-brush, distribute the powder over the paper, which adheres to the moist printed portions. About a dozen persons were thus engaged when I visited the office, all of whom complained more or less of the same symptoms. Some added, that this irritating powder had caused deep ulcers on the genitals; others declared it had salivated them to a certain extent; but though their gums appeared slightly spongy, they hardly seemed more so than those of most persons whose stomachs are out of order; and I could not detect any mercurial fœtor.

I wished much to be allowed to have a portion of this powder for chemical examination, but my request could not be granted, as its composition is kept a secret. I was told it was prepared in Germany; it looked like very fine brass filings; the whole air of the room was loaded with it, and my coat glistened, as also did my face and hair, which rivalled in brightness the wig of Caligula, who had recourse to gold-dust to produce the effect I obtained so cheaply.

Med. Gazette. November 3, 1838.

MATERIA MEDICA.

Counter-Irritant Lotions. By Dr. GRANVILLE.

[THE following are the formulæ referred to in the note to p. 73 of the present Number of our Journal.]

Each kind of lotion consists of three ingredients:

1st. *The strongest liquor of ammonia,* A;
2d. *Distilled spirit of rosemary,* B;
3d. *Spirit of camphor,* C.

A. Saturate a given quantity of distilled water, contained in a glass receiver surrounded by ice, with ammoniacal gas, obtained in the usual way, from a mixture of equal parts of hydrochlorate of ammonia and recently slaked lime, both reduced to a fine powder. The water may be made to take up nearly 800 times its bulk

of ammoniated gas under the circumstances described; its specific gravity will then be about 872, and 100 parts of it will contain 33 parts of real ammonia according to Sir H. Davy's tables. This solution of ammonia will, therefore, be more than three times the strength of the liquor ammoniæ of the Pharmacopœia of London, 100 parts of which, at a specific gravity of 960, contains only ten parts of real ammonia. I have, therefore, called mine "liquor ammoniæ fortissimus."

B. Take two pounds of the tips or small leaves of fresh rosemary, and eight pints of alcohol; leave the whole in infusion for twenty-four hours in a well-covered vessel, and after adding a sufficient quantity of water as will just prevent the empyreumatic smell, distil over seven pints. The Pharmacopœia of London directs the essential oil of rosemary to be distilled instead with rectified spirit. Such a preparation I found unsuited for my purpose.

C. To four ounces of pure camphor add two pints of alcohol, so as to dissolve the camphor, which solution should be filtered. The present tincture of camphor of the Pharmacopœia of London contains one ounce more of that substance, and does not harmonize so well with my two other ingredients as the weaker preparation.

The three ingredients, thus prepared, every medical man should keep always ready at hand in well-stoppered glass bottles, so as to be able to make, extemporaneously, a counter-irritating lotion of any requisite strength, according to the nature of the case requiring that application on extraordinary occasions; but for the ordinary purposes detailed in my work, it will be better to keep both a milder and a stronger ammoniated lotion ready prepared for use.

The milder Ammoniated Lotion.

Assuming the quantity of lotion desired to be divided into eight parts, then the proportions of the ingredients will stand thus:

> A—four eighths;
> R—three eighths;
> C—one eighth.

The stronger Ammoniated Lotion.

If the quantity desired be also divided into eight parts, then the proportions of the ingredients run as follow:

> A—five eighths;
> R—two eighths;
> C—one eighth.

Although the changes of proportion here may be deemed trifling, yet the strength of the lotion is such that I never employ it except in cases of apoplexy, and for the purpose of cauterization.

A and R are gradually mixed together. The mixture becomes opalescent and somewhat turbid, and a peculiar highly agreeable ethereal smell is given out, different from the individual odour of either ingredient, although the extreme pungency of the ammonia be still discernible.

Before the third ingredient is added, it is desirable to clear the previous mixture, by the addition of a small quantity of alcohol, and to set the whole in a cool place.

The lotion must always be kept in bottles with a glass stopper; and their whole virtue depends on the accurate distillation and preparation of the ingredients, as well as on the careful admixture of the latter.

Lancet.   October 27, 1838.

MEDICAL STATISTICS.

On the Mortality and Frequency of Disease amongst Children.
By PETER HENNIS GREEN, M.B.

[THIS is another of a series of communications on the nature and statistics of Children's Diseases, which have appeared from time to time in the same journal

and which do infinite credit to their author. We call the attention of the profession to them, having only room at present for the first Table in the present paper, with the accompanying remarks.]

"This table includes the whole of the entries into the Children's Hospital, Paris, during the years 1833-5 inclusive, and embraces a sum total of 9429 cases. In order to show the manner in which 'mortality' is influenced by 'age,' the patients have been divided into four classes, the interval between each being four years.

| | ENTRIES. | | DEATHS. | |
AGE	Boys.	Girls.	Boys.	Girls.
2 to 4	808	678	334	290
4 to 6	519	590	163	170
6 to 10	1407	1427	209	225
10 to 15	2246	1754	157	176
Total......	4980	4449	863	861

From the above table it appears that the general mortality was 12·98 per cent.; that the mortality amongst the boys was 11·30 per cent.; and that the mortality amongst the girls was 14·85 per cent. Hence disease is more fatal in female than in male children, in the proportion of 14·85 to 11·30.

Let us now see how far the mortality was influenced by the ages of the patients attacked. In the first period (from two to four years) the mortality was 41·99 per cent.; in the second period it had fallen to 27·54 per cent.; while in the fourth period (from ten to fifteen years) it did not exceed 8·32 per cent. Thus we perceive that the mortality is five times greater at the early period of infancy than it is during the last five years of childhood. *Lancet. October* 13, 1838.

Meteorological Results of ten Years' Observations in the Gardens of the Horticultural Society at Chiswick.

[THE publication from which we extract the following table (*The Medical Annual, edited by* Mr. FARR,) is, as usual, distinguished by the fulness, accuracy, and importance of its contents. We the less regret our inability (from want of room) to make further selections from its pages, as we doubt not that it will soon be in the possession of most of our readers. Besides a vast variety of brief statistical articles, interesting to all classes of the profession, the present Number contains several communications of a higher stamp; among which stands conspicuous the admirable "History of the Medical Profession in England," by the learned editor.]

Thermom. 1826-35.	Mean.	Max.	Min.	Mean Range.	Max.	Min.	Max. in Sun's Rays.	Min. on the Earth.	Mean pressure in inches	Rain Inches.
January	36°·4	41°·4	31°·6	9°·8	60°	10°	70°	3°	29·965	1·284
February ..	40 ·7	46 ·8	34 ·6	12 ·2	65	10	80	4	29·935	1·530
March	43 ·5	51 ·1	35 ·9	15 ·1	75	21	95	8	29·955	1·410
April.......	48 ·8	58 ·2	39 ·4	18 ·8	78	24	105	12	29·890	1·870
May	55 ·7	66 ·7	44 ·7	21 ·0	86	28	126	16	30·047	1·864
June.......	60 ·8	71 ·7	49 ·9	21 ·8	91	37	125	26	29·962	1·864
July........	64 ·0	75 ·3	52 ·7	22 ·5	94	40	126	32	30·001	2·617
August....	62 ·3	73 ·4	51 ·2	22 ·1	86	36	120	29	29·935	2·518
September	57 ·6	67 ·8	47 ·4	20 ·4	82	32	114	27	29·938	2·932
October ...	51 ·8	60 ·4	43 ·1	17 ·3	80	28	97	20	29·994	2·369
November	43 ·7	50 ·1	37 ·4	12 ·7	63	20	79	11	29·950	1·969
December	40 ·7	45 ·8	35 ·6	10 ·2	58	10	69	6	29·993	1·789
Year.......	50 ·5	59 ·1	42 ·0	17 ·1	94	10	126	3	29·958	240·13

PART FOURTH.

Medical Intelligence.

ON THE IDENTITY OF SMALL-POX AND COW-POX.

By John Baron, m.d. f.r.s. &c.

(*In a Letter addressed to the Editors.*)

Gentlemen,   *Cheltenham; Dec.* 4, 1838.

Permit me to offer my best thanks for the kind and respectful manner in which you have been pleased to speak of my Life of Jenner. The spirit you have evinced on this occasion, leaves no room to doubt, that you will candidly give a place to the following remarks in your next Number. They are intended to rectify some mistakes into which the reviewer has inadvertently fallen in discussing the identity of variola and the variolæ vaccinæ.

You will not be surprised when I repeat my conviction that the proofs, both historical and pathological, by which that identity is illustrated, amount very nearly to a complete demonstration. To go through all the links in this chain would on the present occasion be impossible; but as I shall be enabled in a few words to remove the main objections which you offer to the doctrine, I am sure you will not refuse me an opportunity of doing so. Were the question merely of a speculative character I would not trouble you, but as it has a direct bearing upon the lives of our fellow creatures, you will I doubt not hail every opportunity of diffusing truth.

After quoting my opinion respecting the result of the blunders that were committed at the commencement of vaccination in the Small-Pox Hospital, you observe, p. 486, "Two facts are here put in apposition by Dr. Baron; one that the cow-pox sometimes affects the milkers with a severe disease; the other that small-pox after repeated inoculations approximates in its nature to the mildness of cow-pox; the number of pustules gradually diminishing until only one is seen, and that at the place of insertion efficiently protecting the constitution from subsequent small-pox, although running its course without constitutional disturbance. Had the result followed the inoculation of pure small-pox virus, the support thence afforded to Dr. Baron's and Dr. Jenner's views of the identity of the two diseases would have been vastly greater; but in the case referred to it was not true small-pox that was inoculated."

I perceive the grounds on which you make this last assertion, but I can entertain no doubt that they are erroneous: for if you will turn to another part of my book, vol. i. p. 287, you will find that small-pox was propagated by contagion from this very virus, and produced fatal results. But take another example, where all questioning such as you have suggested must vanish. The great object of small-pox inoculation was to reduce the number of pustules, and expert inoculators always endeavour to accomplish this object. That it was accomplished we know for certain; and the early inoculators were quite assured that one correct small-pox pustule was capable of protecting the constitution. On this point, I observe, vol. i. p. 245, "as therefore the variolæ vaccinæ sometimes assumes the character of small-pox under one of its modifications, so the latter under certain circumstances approximates in its nature the mildness of the former. *After a series of inoculations with true variolous matter, it has often been observed that the severity of the symptoms and the number of the pustules gradually diminish till only one is seen at the point of insertion.*"

Again, you say, at p. 495, that the artificial communication of the cow-pox has never produced a general eruption or true small-pox. I perceive from this statement that

you have overlooked the information contained in the appendix to my second volume, p. 455, where I say " I have in this volume mentioned the variolous epizootic in Bengal, and the propagation of the genuine variolæ vaccinæ from that source. I have since received more recent intelligence from the same quarter, which proves that more extensive inoculations from the diseased cows have produced not the mild vaccine vesicle but an eruptive disease of the true variolous character. When the black cattle in England were affected in 1780 with a destructive variolous complaint, there can be no doubt that inoculation from this disease would have produced similar results. Dr. Jenner, at a later period, found the variolæ among the cows of a more mild and less malignant nature. He employed this mild virus, and with what success all the world knows."

There is still later intelligence upon the same subject from India. Mr. J. Wood, of Gowalpara, in a paper published in Mr. Corbyn's India Journal for March, details several cases in which lymph taken from the cows produced a disease of an eruptive character. In one of the cases, that of a fine healthy native boy five years of age, Mr. Wood was not without apprehension that it would terminate fatally, from the violence of the incursive fever. In other respects the symptoms closely resemble those of small-pox, *so as to confirm the suspicion of Dr. Jenner, that the small-pox and cow-pox virus might have both at first originated in the same source and be essentially of the same nature.*

From various trials, at different places, Mr. Wood is of opinion that cow-pox is not invariably and uniformly so very safe a prophylactic against small-pox in India as it has been found in Europe, and that, if such instances multiply, it might be a question whether it may not be prudent to resort to small-pox inoculation at times when the cow-pox assumes this dangerous and fatal form. From a few trials, he is inclined to think that at such times, it is preferable to vaccination, inasmuch as it has produced a milder and safer disease. The risk of creating an epidemic small-pox thereby, he thinks too small to merit notice.

The ravages occasioned by small-pox throughout India are frightful. In Ajmeer, during six weeks of the present year, nearly 3,000 deaths occurred through it.* I can scarcely conceive any testimony more striking than that afforded by Mr. Wood; he is manifestly an unprejudiced witness, and the conclusions he has arrived at have been forced upon him by the phenomena which he witnessed, and that too in direct opposition to his previously conceived opinions.

Permit me to draw your attention to another misapprehension which appears in the review, where it is said that the *Grease* is the form in which the disease appears in the horse. I have taken some pains to correct this mistake in the Appendix above referred to, where I remark, " I take this opportunity of expressing my regret that I have employed the word *Grease* in alluding to the disease in the horse. Variolæ equinæ is the proper designation. It has no necessary connexion with the grease though the disorders frequently coexist. This circumstance at first misled Dr. Jenner, and it has caused much misapprehension and confusion." I have moreover shown, vol. i. p. 242, that the variolæ equinæ is a vesicular disease and is sometimes diffused over the body, not being confined to the heels which is the case with the grease.

In conclusion, I have to observe, that as the true small-pox has been conveyed from the cow to man, so in like manner has the disease been communicated from man to the cow. I do not at present refer either to the experiments of Mons. Viborg or Professor Sonderland, but to facts mentioned at p. 441 of my first volume, on the authority of Dr. Waterhouse. At one of the periodical inoculations in New England, cows were milked by persons in all stages of the small-pox : the consequence was, that the cows had an eruptive disorder on their teats and udders so like the small-pox pustule, that every one in the hospital, as well as the physician who told me, declared that the cows had the small-pox.

Several other remarks have occurred to me, on reading other portions of the review, but I hope it is unnecessary to bring them forward at present; I trust what is said

* See Asiatic Journal for December, 1838; p. 970.

will induce my professional brethren to examine all the evidence accumulated in the life of Jenner, deliberately and impartially, and I can entertain no fear as to the result. Truth has been the only object of my search, and if that be obtained, I shall be satisfied.

<div style="text-align:center">I am, gentlemen, yours faithfully,</div>

<div style="text-align:right">J. BARON.</div>

OBITUARY.

BROUSSAIS.

FR. JOS. VICT. BROUSSAIS was born at St. Malo, on the 17th December, 1772. Being the son of a medical man he received some professional instruction under his father's roof; but, upon the whole, his education, as well medical as of a more general kind, was very imperfect; and when he entered the public service, as an assistant surgeon, in his twentieth year, there is little doubt that he had yet to learn the art which he was about to practise. He first joined the marine service, and served in it ten years : he then proceeded to Paris to prosecute his studies, and took his degree of M.D. in the year 1803. He remained in Paris two years longer, and then joined the army, with which he served until the peace of 1814, being in the campaigns of Germany, Holland, Italy, and Spain. On his return to Paris, he was appointed physician-in-chief and professor of the military hospital of Val-de-Grace, to which he remained attached many years, promulgating his peculiar doctrines, with the utmost energy, to a large body of pupils. In 1831, he was appointed professor of general pathology in the Academy of Medicine. He was also a commander of the Legion of Honour. He died at his country-house at Vitry, on the 18th November, 1838, rather suddenly at last, although he had long laboured under cancer of the rectum. He was buried with great pomp at the Père-la-Chaise on the 21st November, the students of medicine themselves dragging the hearse in honour of the deceased.

Another opportunity will probably be afforded to us of speaking of the professional character of M. Broussais, and of the doctrines which will ever render his name memorable in the history of medicine. These doctrines, regarded as a system of medical philosophy, are fast falling to the level to which they belong ; but like almost all other systems, that of Broussais has left behind it not a little good. More than any other founder of a medical sect in modern times, Broussais has influenced medical practice in every civilized country ; and it can hardly be doubted, that, although many of his doctrines were false and much of his practice bad, the general influence of his system has been beneficial, in a practical point of view.

M. Broussais' publications are numerous and well known. His greatest work is *The History of Chronic Inflammations*, which will retain its place as a valuable treatise in practical medicine, when all his theories are merely recognized as matters of history.

The following is as complete a list of M. Broussais' writings as we have been able to procure : we shall arrange them in chronological order.

1805. Thèse sur la Fièvre hectique.
1808. Histoire des Phlegmasies chroniques. 2 vols.
1811. Lettre sur le Service de Santé interieur.
1816. Examen de la Doctrine médicale généralement adoptée.
1821. Examen des Systèmes de Nosologie, précedé de Propositions renfermant la Substance de la Médecine physiologique.
1824. Traité de Physiologie appliquée à la Pathologie.
1824. Catéchisme de la Médecine physiologique.
1826. De la Théorie médicale, dite pathologique.
1828. De l'Irritation et de la Folie.*
1829. Commentaires des Propositions de Pathologie consignées dans l'Examen. 2 vols.

* A second edition of this work, in two volumes, was passing through the press at the time of the author's death.

1829.   Réponse aux Critiques de l'ouvrage sur l'Irritation et la Folie.

1832.   Mémoires sur la Philosophie de la Médecine et sur l'Influence des Médecins physiologiques.

1832.   De Cholera-Morbus épidemique.

1834.   Mémoire sur l'Association du Physique et du Moral, (Mémoires de l'Académie, vol. 1.)

1835.   Cours de Pathologie et de Thérapeutiques générales.*   5 vols.

1836.   Cours de Phrénologie.   1 vol.

Besides the above, there are many articles from the pen of Broussais in the "Annales de la Médecine physiologique," a journal established by him (1822-1834); and a few in the "Journal de Phrénologie."

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DR. HEDENUS, OF DRESDEN.

Johann August Wilhelm Hedenus, the son of an apothecary, was born at Langensalza, in Thuringia, on the 11th August, 1760.   He studied medicine at the Medico-Chirurgical College of Dresden, and, after passing through the necessary examinations, joined the army in 1783, as regimental surgeon.   Here he remained two years, spending, however, one of these in the prosecution of his studies at Dresden.   In 1791, he was appointed *Pensionairchirurg* and assistant prosector; and, two years afterwards, prosector of the Medico-Chirurgical College in that city. In 1798, he was promoted to *Generalstabchirurg*, and appointed professor of surgery, which office he held until 1808, when he was appointed body-surgeon to the king, and afterwards accompanied him on his travels.   On his return, he came into great reputation and practice as a surgeon, and obtained in succession all those honorary distinctions which the medical men of Germany seem to prize so much.   He was body-physician and body-surgeon to the king, government counsellor and medical counsellor, knight of the civil order of Merit, &c. &c.   In 1824, Hedenus received the honorary degree of M.D. from the university of Leipzig.   In July, 1833, the fiftieth anniversary of his public service, or, as it is called in Germany, his *Jubilee*, was celebrated at Dresden; on which occasion a medal was struck in his honour.   He died at Dresden the 29th December, 1836.—Dr. Hedenus was a very accomplished surgeon, and, both by precept and example, greatly improved the state of surgical practice in Saxony.   His mind was devoted chiefly to practical purposes, and accordingly he wrote fewer books than most of his distinguished brethren.   As a surgeon, he was best known by foreigners on account of his operations for the extirpation of the thyroid gland, and for disease in the antrum of the upper jaw.   The only distinct work we have from his pen is on this last subject: viz. "Antwort auf die Reclamation des Prof. Weinhold, meine Operations-und-Heilungsmethode eines Afterproducts der Highmorshöhle betreffend;" Leipzig, 1822.

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DR. BLUFF, OF AACHEN.

Mathias Joseph Bluff, the son of poor parents, was born at Cöln, February 5, 1805.   Having discovered early indications of talent, he was taken notice of by Dr. Sprögel, and placed in the way of acquiring knowledge.   Having passed some years at the Gymnasium, he went to the university of Bonn in 1822, where he remained three years, studying medicine, and devoting his spare hours to the study of botany, of which he had been long fond.   An early proof of his devotion to this study was the publication, in 1825, together with his friend Dr. Fingerhuth, of the first part of the "Compendium Floræ Germanicæ," since completed by Nees von Esenbeck and Schauer.   From Bonn, Bluff went to Berlin, where he took his degree of M.D. in December, 1826; his thesis being "De absorptione Cutis."   He first commenced practice in the small town of Gangelt, in 1827; but exchanged it for the neighbouring town of Geilenkirchen, in 1829.   He remained here till 1832, when he again removed to Aachen, where he enjoyed great reputation and good practice until his

* M. Broussais's Lectures.

death, which took place on the 5th June, 1837, in consequence of typhus fever. Dr. Bluff was a man of great taste, learning, and industry. Besides numerous communications in various medical journals, he was author of the following works:

1. Entwicklungs-Combinationen organischer Wesen. Cöln, 1827.—2. Pastoralmedizin. Aachen, 1827.—3. Ueber die Heilkrafte der Küchengewächse. Nürnberg, 1828.—4. Ueber die Krankheiten als Krankheits-ursachen. Aachen, 1829.—5. Synonymia Medicaminum. Lipsiæ, 1831.—6. Esquirol's Mordmonomanie (Transl.) mit Zusatzen. 1831.—7. Helkologie. Berlin, 1832.—8. Velpeau, die Convulsionen (Transl.) mit Zusatzen. Aachen, 1835.—9. Leistungen und Fortschritte der Medicin in Deutschland. 4 vols. 1832-6.—10. Reform der Medicin. 2 vols. Leipzig, 1836, 1837.

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1. Guy's Hospital Reports. No. VII. October, 1838.—pp. 190.

2. The Organ of Hearing. By T. Wharton Jones, Esq. (From the Cyclopædia of Anatomy and Physiology.)— Royal 8vo. pp. 38.

3. Report on the Malignant Fever called the Pali Plague, which has prevailed in some parts of Rajpootana, since the month of July, 1836. Prepared and published by order of the government of India. By James Ranken, M.D., Secretary to the Bengal Medical Board.—Calcutta, 1838. 8vo. pp. 232.

4. Practical Surgery; with 130 engravings on wood. By Robert Liston. Second Edition.—London, 1838. 8vo. pp. 529.   21s.

5. The Principles of Surgery. By John Burns, M.D. F.R.S., Regius Professor of Surgery in the University of Glasgow.— London, 1838. Two Vols. 8vo. pp. 554-535.   24s.

6. The Surgical Anatomy of the Perinæum. By Thomas Morton, formerly one of the House Surgeons of the University College Hospital. Illustrated with Lithographic Plates, and Wood Engravings.— London, 1838. Royal 8vo. pp. 80. 7s. 6d.

7. Lectures on the Physiology and Diseases of the Chest; including the Principles of Physical and General Diagnosis and their Application to Practice. By C. J. B. Williams, M.D. F.R.S.—London, 1838. 8vo. pp. 204. (From the Med. Gazette.)

8. Practical and Surgical Anatomy. By W. J. Erasmus Wilson, Lecturer on Practical and Surgical Anatomy and Physiology. Illustrated with 50 Engravings on Wood.— London, 1838. 8vo. pp. 492. 10s. 6d.

9. Diet and Regimen, physical, intellectual, and moral, as means in the prevention and cure of disease. By Robert Dick, M.D. —Glasgow, 1838. 8vo. pp. 386.

10. Observations on the Oriental Plague, and on Quarantine as a means of arresting its Progress; addressed to the British Association of Science. By John Bowring. —Edinburgh, 1838. 8vo. pp. 45. 1s.

11. Observations on the Anatomy, Habits, and Economy of Athalia Centifoliæ, the Saw-fly of the Turnip. The Prize Essay of the Entomclogical Society for 1837. With a Plate. By George Newport, Esq.—London, 1838. 8vo. pp. 32. 1s.

12. Practical Observations on the Causes and Treatment of Curvature of the Spine; with hygienic Directions for the Physical Culture of Youth, as a Means of preventing the Disease. By Samuel Hare, Surgeon. —London and Leeds, 1838. Royal 8vo. pp. 151; with Ten Plates. 10s.

13. Outlines of Military Surgery. By Sir George Ballingall, M.D., Regius Professor of Military Surgery in the University of Edinburgh, &c. — Edinburgh, 1838. 8vo. pp. 542. Second Edition. 14s.

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15. An Account of the Proceedings of the Sixth Anniversary Meeting of the Provincial Medical and Surgical Association, held at Bath, July 1838.—Worcester, 1838. 8vo. pp. 112.

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18. The Elements of Materia Medica; comprehending the natural History, Preparation, Properties, Composition, Effects and Uses of Medicines. Part I. By

J. Pereira, F.R.S. &c. — London, 1839. 8vo. pp. 559. 16s.

19. Medical Report of the House of Recovery and Fever Hospital, Dublin, for the year 1836.— Dublin, 1837. 8vo. pp. 39.

20. An Essay on Food, in which the received Doctrine of modern Physiologists respecting the waste of the Body is exploded, &c. &c. By N. Grisenthwaite.— London, 1838. 8vo. pp. 119. 4s.

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25. The Philosophy of Disease; or, a Popular Outline of the Principles of Medical Science: comprising a brief Exposition of the Laws of inflammatory Action. By J. B. Harrison, Surgeon. — London, 1838. 8vo. pp. 152. 4s. 6d.

26. The Medical Portrait Gallery. By T. J. Pettigrew, F.R.S. Part X., containing Mr. Lawrence, Malpighi, Sir John Pringle, Dr. Clutterbuck. 3s.

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1. Sydenham's Antheil an der Uneinigkeit unserer Lehre über die Gicht. Von Dr. C. J. Heidler.—Berlin, 1838. 8vo. pp. 35.

2. Zur Jubel-Feier des Professor emeritus Dr. Johann Busch in St. Petersburg, am 26sten Mai, 1838.—4to. pp. 32.

3. De Puris natura atque formatione. Disquisitio Physiologica, Auctore Dre. H. Wood.—Berolini, 1839. 4to. pp. 47.

4. Die Achsendrehung des Auges. Von Dr. Alexander Hueck. — Dorpat, 1838. 4to. pp. 35.

5. Die Pathologie und Diagnose der Krankheiten der Brust, ins Besondere erläutert durch eine rationelle Erklärung ihrer physikalischen Zeichen, &c. Von C. J. B. Williams, M.D. &c. Aus dem Englischen ubersetzt und herausgegeben. Von Dr. H. Velten. Zweite deutsche Auflage.—Bonn, 1838. 8vo. pp. 244.

6. Die Chirurgische Muskellehre in Abbildungen. Von Dr. G. B. Günther, Professor der Chirurgie in Kiel.—Hamburg, 1838. 4to.

7. Dissertatio de Anastomosi Jacobsonii et Ganglio Arnoldi. Auctore Hen. Car. Bang Bendz, Med. and Chir. Candidato.— Hauniæ, 1833. 4to. pp. 53. Tab. VIII.

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11. Theoretisch-praktisches Handbuch der Heilquellenlehre. Von August Vetter, M.D. &c. II. Band.—Berlin, 1838. 8vo. pp. 464-515.

12. Die Kranke Darmschleimhaut in der Asiatischen Cholera mikrokopisch untersucht. Von Dr. Ludwig Boehm. Mit. II. Kupfert.—Berlin, 1838. 8vo. pp. 83.

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14. Medicinische Beobachtungen und Bemerkungen. Von J. D. W. Sachse, M.D. &c. Zweiter Band.—Berlin, 1839. 8vo. pp. 359.

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17. System der Physiologie für Naturforscher und Aerzte bearbeitet von Dr. C. G. Carus. Erster Theil.—Dresden, 1838. 8vo. pp. 372.

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PART FIRST.

Analytical and Critical Reviews.

ART. I.

1. *Mémoire sur la Découverte du Magnétisme Animal.* Par A. MESMER. —*Genève,* 1779. 12mo.
Memoir on the Discovery of Animal Magnetism. By A. MESMER.— Geneva, 1779. 12mo.

2. *Ueber den thierischen Magnetismus in einem Briefe an Hoffmann, (mit Zusätzen.)* Von E. GMELIN, Physikus zu Heilbronn.—*Tübingen,* 1787. 8vo.
On Animal Magnetism, in a Letter to Hoffmann, (with Appendices.) By E. GMELIN, Physicus at Heilbronn.—*Tübingen,* 1787. 8vo.

3. *A Practical Display of the Philosophical System called Animal Magnetism.*—*London,* 1790. 4to.

4. ΑΣΚΛΗΠΙΕΙΟΝ. *Allgemeines medicinisch-chirurgisches Wochenblatt für alle Theile der Heilkunde und ihrer Hülfswissenschaften.*—*Berlin,* 1811. 104 Hefte.
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6. *Jahrbücher für den Lebensmagnetismus, oder Neues Askläpieion. Allgemeines Zeitblatt für die gesammte Heilkunde nach den Grundsätzen des Mesmerismus; herausgegeben von* Dr. K. C. WOLFART, Königlich-Preuss. ord. Professor der Heilkunde an der Berliner Universität, Ritter des eisernen Kreuzes, 2ter Klasse, und des St. Annen-ordens, 2ter Klasse. 5 Bände.—*Berlin,* 1818-1823.
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University of Berlin, Knight of the Iron Cross (2d Class), and of the
Order of St. Ann (2d Class).   Five Volumes.—*Berlin*, 1818-1828.

7. *System des Tellurismus, oder thierischen Magnetismus.   Ein Hand-
   buch für Naturforscher und Aertze.   Von Dr. D. G. KIESER,* Hofrath
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*System of Tellurism, or Animal Magnetism: a Manual for Philoso-
   phers and Physicians.*   By Dr. D. G. KIESER, Court-Counsellor and
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8. *Du Magnétisme Animal en France, et des Jugements qu'en ont portés
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   *par les Commissaires de l'Académie des Sciences de la Faculté, et de
   la Société Royale de Médecine, et une Analyse des dernières Séances
   de l'Académie Royale de Médecine, et du Rapport de* M. HUSSON;
   *suivi de Considérations sur l'Apparition de l'Extase, dans les Traite-
   mens Magnétiques.*   Par ALEXANDRE BERTRAND, Docteur en Méde-
   cine de la Faculté de Paris, Membre de la Société Royale Académique
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*On Animal Magnetism in France, and on the Judgments pronounced on
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   made in* 1784, *by the Commissioners of the Academy of Sciences, and
   of the Faculty, and of the Royal Society of Medicine, and an Ana-
   lysis of the Report of* M. HUSSON; *followed by Considerations on the
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   BERTRAND, Doctor of Medicine of the University of Paris, Member
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9. *Die Seherin von Prevorst.   Eröffnungen über das innere Leben des
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   Mitgetheilt von JUSTINUS KERNER.   Zweite vermehrte und verbes-
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*The Prophetess of Prevorst.   Revelations on the inner Life of Man,
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11. *An Introduction to the Study of Animal Magnetism.*   By the Baron
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    wohlthätigen Zweck bestimmt.)*—*Weimar und Leipzig*, 1838.
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13. *The Lancet and Medical Gazette.*   Volumes for 1837 and 1838.—
    London.

THE empire of medicine has just passed through one of those unaccountable paroxysms of credulity to which, from time to time, it seems ever to have been subject. Circumstances so plainly suspicious, and doctrines so obviously wild, that they seem only to require to be presented to any reasonable mind to be detected and rejected, are found, after certain or uncertain intervals, to excite the feelings and mislead the judgment of a very considerable proportion of the profession. Evidence, bold and presuming, pours in for a time on every side. The ignorant public, of the higher classes especially, catch the flame of enthusiasm; and grave medical authorities incline to relax their unbelieving frown, and smile on follies which are under powerful patronage. Whilst the reputation to be derived from science must be built up in solitude, with care and wasting toil, and many misgivings of the event, the bold necromancer comes, in these happy seasons, at once before the public; false lights blaze around; the music of flattery cheers him; the applause of the ignorant rewards him; the wealth of dupes enriches him. For a time reason is dethroned, and reflecting men repine under the government of misrule. In every house, in every society, at every dinner-party, they are shamed with a detail of wonders which they cannot deny and cannot equal; of facts which they have not witnessed, and of phenomena which they are almost reproached for not having produced. Their less scrupulous neighbours begin to be converted, begin to deal in magic themselves; and truth seems inclined to fly from the medical world. Nevertheless, there is comfort. The world is round, saith the proverb, and all things come to an end. Pass a few short months, and the delusion stands exposed: the actors are declared to be deceivers or deceived; the facts so lately boasted of are trampled upon with contempt, and the doctrines built upon them are laughed to scorn. The fashionable crowd flock to a new prima donna or to a watering-place doctor; and the half-converted physicians and surgeons never mention the subject more; for, although the folly will rise again, it will scarcely be in their time.

Such has been the past history, such has been the recent course of the doctrine and practice of Animal Magnetism. Often followed before, it had many times fallen into disrepute. Fostered by the Germans into life, and petted by the French into a sickly existence, our climate seemed always too cold for it. Many disguises it assumed; but the severity of physic abashed it, or the simplicity of philosophy put it out of countenance. Weak women and weak doctors went astray under its guidance, but scarcely any man of reputation had become a convert to it, and the public of England looked on the whole matter with incredulous and steady face. But *nemo omnibus horis;* and folly will have its turn. Even medicine is not always vigilant, and sometimes Æsculapius nods. In the nineteenth century, when knowledge is advancing in every direction, and when London abounds with scientific men, the *mime* called Animal Magnetism steps upon the metropolitan stage once more, waves his presuming wand, and performs with almost unbounded applause before crowded audiences. Women and children go to sleep at command, and wake only to sleights of hand. Their nervous system acquires intense sensibility. They become capable of impressions of sense in new modes. They obey volitions not reduced to words; they

acquire knowledge which they never learnt; they understand what they were never taught. For them nothing is any longer obscure; to them nothing is unknown. They know all present things, and they prophesy events to come. And all this, and more, is produced by the influence of another person on the individual, which other person neither sleeps or wakes differently from common mortals; sees with his eyes, and feels with his hands like the vulgar; is not wiser than the philosophers; knows nothing of disease by mere intuition, but has studied medicine in the usual way; and who is no prophet, and cannot even foresee how all this necromancy, wrought by his unconscious hand, or effected by his suddenly omnipotent will, is to end at last.

There must surely be a sufficient number of persons of sane mind in the profession who have thought as we have thought, to exempt us from the suspicion of affecting wisdom after the fact, when we say that, from the first dawn of these diverting but degrading scenes to the last, from the first burst of blank surprise in the good unscientific public of this country, through all the phases of advancing credulity among the more scientific, down to the last complete and melancholy explosion, we have never varied from a most hearty, entire, and unconcealed disbelief of very nearly all the phenomena exhibited by all the patients, and related by all the practitioners, without exception. Several were plainly referrible to the boundless singularity of nervous and hysterical malady, and many were as evidently feigned. That there was gross deception somewhere, we were always sure: the only doubt we had was as to the precise point where the deception began. We beheld, always with astonishment, sometimes with concern, and sometimes with contempt, the credulity, real or pretended, of the magnetisers. We observed, with some little disgust, here and there a practitioner willing to become the *provincial* wonder, and only restrained by his prudence from declaring what a mixture of ignorance and cupidity prepared him to assert and to do. But, above all, we lamented to see the great delusion supported by one of the ablest physicians of this country, filling the most important chair in the largest medical school of the kingdom.

Of Dr. Elliotson's perfect honour and good faith we never entertained a doubt, in all the marvellous scenes performed in the North London Hospital. We were surprised to see him so content with insufficient evidence, and exhibiting so very marked an example of a total want of cautious observation and philosophical reflection. We blushed to read of lords and gentlemen chuckling over the discovery that they could communicate that intelligence to others which they so plainly wanted themselves; and we did not feel surprise when, at a watering-place hotel dinner, soon afterwards, we found one of these supposed patrons of science (although not, we believe, a magnetiser,) declaring that the fame of a celebrated watering-place doctor in England made the physicians of London and Edinburgh sick at heart. The scenes exhibiting in London left us without courage to controvert this graceless libel on a profession once deemed liberal and learned. At length came the *dénouement;* and nervous women and children, and doctors and noblemen, disappeared like so many shadows; and country doctors assumed an air of unshaken wisdom, and were laudably anxious to bury the whole subject in oblivion. Impossible as it is to preserve an entirely serious

tone when speaking of these things, they are really of a most melancholy nature. Considering the high sanction which even a temporary belief in the powers of animal magnetism has obtained in this country, we look upon its recent rise and progress, and its abrupt and shameful fall, as powerfully calculated to degrade a profession which is certainly, for other reasons, not rising in public estimation.

To devote an article to the consideration of animal magnetism, now that the English practitioners are one and all ashamed of its name, would be a work of supererogation, if the delusion, unabashed, were not yet parading itself over some parts of the continent; and if its return to these shores, and to our own hospitals and colleges, at any future period, were quite out of the question. But if we can quicken its decline where it now reigns in the hearts of nervous proselytes and dreaming physicians, or can assist in forming a barrier against a probable revisitation of it, we shall not think the otherwise more than due attention we have given to the wild productions which treat of it entirely thrown away. Independently, however, of all these considerations, the history of the phenomena resulting from the various forms and practices of what has been called animal magnetism, whether these phenomena be considered as physical or moral, or partly both, are among the most curious in the whole history of man. The cool effrontery and undoubted skill of some of the magnetisers, and the *bonhomie* of others; the subjugation of the bodies and souls of the magnetised; the puzzled attitude of learned societies; the vain authority of the police; and the gradual dissipation of the whole subject again and again from the public mind, magnetisers and magnetisees disappearing like the actors in a play, are of a nature highly to amuse, and not a little to instruct, all those who love to regard human beings (who advance high claims to the profession of reason), in various points of view.

Anthony Mesmer, who, in the "Annals of Vital Magnetism," edited by a Professor of the University of Berlin, is gravely stated to have been the greatest man that the world ever produced—was born, we know not where or when: according to some, he first saw the light at Vienna, in 1740; according to others, he was born at Merseburg in Swabia, in 1734; whilst others again assert, that Switzerland was the land of his birth, but leave us in the dark as to the time and exact place of the first appearance on the stage of life, of "this noble being, this faithful Christian, this Theologian, Philosopher, Jurist, Mathematician, Chemist, and Physician," (for in all these characters is he eulogized by one of his Prussian admirers, Dr. von Voss.*) His first work, a dissertation on the influence of the planets on the human body, was published in 1766. It was not, however, till 1772, when he began to turn his theories to a practical account, that he produced any sensation in the public at large. His announcement of the discovery of a universal fluid, " the immediate agent of all the phenomena of nature, in which life originates, and by which it is preserved," might have shared the fate of the thousand crude and fantastic theories which are continually floating and bursting on the surface of Time's restless stream, had he not boldly declared himself divinely empowered to regulate the operations of this fluid, to guide its

* Wolfart's Annals, vol. i. part i. p. 83.

currents in healthy channels, and obliterate, by its means, every track of disease. Goethe has laid it down as a precept to the man whose vocation it is to gull the public, that he should never be afraid of making too preposterous demands on its credulity; should never trouble himself by forming delicate and ingenious devices for ensnaring its belief; but should at once " commit downright daylight depredations" on its faith. Mesmer needed not this formal precept; he instinctively obeyed it. He commenced his voyage of wonders by launching this simple assertion, " There is one health, one disease, one remedy, and one physician—and that physician am I." Such a declaration was not immediately successful; some of its hearers expressed doubts as to the sanity of its propounder; others condescended to oppose themselves formally to its reception; others disregarded it; but Mesmer persevered, undoubting and undismayed, and shortly saw the time arrive when his modest pretension not only filled his coffers with fees, and induced the French government to sue him to accept a pension and a palace, but actually won for him the sum of 340,000 francs in hard cash, which were paid him by his devoted disciples, as the price of initiation into those secrets of nature, of which he boasted himself to be the sole discoverer and depositary. It was by the magnet that he first pretended to regulate the distribution of the universal fluid, which was to fill his particular pocket; and the magnets for his experiments were furnished him by Father Hell, a professor of astronomy at Vienna, who, when he announced the curative effects which they produced in his hands, claimed the merit of the discovery, and, setting aside his theory, explained their therapeutical properties by their form and construction. A very pretty quarrel now ensued between these philosophers, Hell accusing Mesmer of stealing his magnetical discoveries, and Mesmer reproaching Hell with attributing to his magnet, and indeed with appropriating, the virtues of the new Mesmerian universal fluid: the advantage, such as it was, of the squabble, remained with the holy Father, who it seems was better known and more respected than his antagonist. Mesmer's ready talent, however, soon avenged him on the astronomer, and gained him more ground than he had previously lost: he shortly promulgated the discovery, that the new universal fluid, which, though it pervaded all space and had existed from all time, he regarded, it appears, quite as his own property—as a kind of estate entailed on him and his family— was not exclusively affected by the contemptible magnets of a priestly star-gazer, but under his hands could be concentrated in and liberated from any substance he pleased, as paper, bread, wool, silk, leather, &c.: he even asserted that he could charge jars with it, and of course discharge them at pleasure. Health he now defined to be a regular and harmonious distribution of this fluid throughout the body: in its deficiencies and anomalous currents he found the cause of every disease; and his treatment consisted in setting up what he called an artificial *tide*, or ebb and flow, throughout the system, until the fluid reached a healthy level, or resumed a smooth, unruffled course, forming neither broads nor rapids, and resembling rather the stream of a canal than that of a romantic river.

By means of a theory crude and absurd as the above did Mesmer not only enrich himself, as we have already said, but actually instituted a

school, not composed solely of lay enthusiasts and mere fanatics, but of learned professors and of medical practitioners ; who, far from disdaining his protection or seeking to disavow or modify any of his doctrines, declared themselves unreservedly his disciples, spoke of him with affectionate veneration and even awe, holding him up indeed in their organ—the *Annals of Vital Magnetism*—as the divinest of philosophers, and greatest of physicians.

We find Mesmer in 1775 and 1776, travelling in Bavaria and Switzerland, visiting the hospitals, and creating a great sensation by his mysterious manipulations, and by the novel effects which they frequently produced on hysterical and half-witted females. On his return to the Austrian capital, he succeeded in rousing the attention of the public to his proceedings, by affirming, that he had cured of complete blindness a celebrated singer, Mlle. Paradis, who had been for ten years unsuccessfully treated by Herr von Störk, physician to the court. It would almost appear, that there was some collusion on this occasion between Mesmer and his patient: at any rate, there was considerable difficulty in ascertaining whether she had been relieved by him or not; some scandalous scenes took place, and at length she was got out of his hands and found to be as blind as ever, although he had the assurance to thank heaven that he had been able to restore her sight, and that the disturbances which his adversaries had excited, had not deprived her of the beneficial results of his treatment. This whole exploit redounded so little to his credit, that he found it necessary precipitately to quit Vienna ; according to some, he was ordered by the Empress to leave the capital at twenty-four hours' notice.

Shortly afterwards we find Mesmer at Paris, where his fame had already preceded him. The state of French society was at that time particularly favorable to the reception of his marvellous doctrines and mysterious practice; a feverish excitement prevailed, which, instead of encouraging enquiry into the social evils in which it originated, induced men to suppress all anxious presentiment, and to defer serious thought, so long as they could find frivolous disputants or marvel-mongers, who could divert their attention from the dangers with which they were threatened. Matters of the least possible moment were now sufficient violently to agitate the public. The heads of different schools of music found partisans, who attacked each other with all the zeal and bitterness of political controversy. A vague commotion pervading all classes of society was the forerunner of the terrible storm which was shortly to convulse and to confound them. Amongst the most ardent supporters of Mesmer at Paris were two men who were afterwards to play conspicuous parts in the revolutionary drama, La Fayette and D'Epremenil. Mesmer was neither slow in perceiving the signs of the times, which were capable of being turned to his advantage, nor backward in making the best use of them. He at once declared himself " *un homme de génie et un bienfaiteur de la race humaine,*" and fixed the price of his medical attendance at ten louis d'ors per month. His subsequent proceedings corresponded admirably to these preliminary measures. Feeling that the enthusiasm which he excited in the public would soon die away if it did not encounter ardent adversaries, he provoked the learned societies of the French capital to enter the lists against him, and raised a storm of opposition

which had the effect of attaching his disciples devotedly and indissolubly
to his cause, and of enabling him to appear in the character of a martyr
sacrificed at the altar of falsehood.   The infatuation, under such cir-
cumstances, of the vulgar, the idle, and the imbecile, may be easily
accounted for; but we cannot suppress our astonishment when we find
men of learning, reputation, and real rank in society ranged on the side
of an impudent impostor.   Deslon, physician to the Count d'Artois, was
one of the first who joined him : among other subsequent disciples came
Court de Gibelin, author of "Le Monde primitif," who addressed a long
appeal to the public in his favour, in which he speaks of him in the most
extravagant terms.   He details his own cure by magnetism, and that of
a Mademoiselle de Berlancourt, who is represented as saying,

> Infans, cæca, trahens gressum, te, Mesmere, posco
> Verba, pedes, oculos : Ambulo, cerno, loquor !

The recovery of this young lady is authenticated by her uncle, M. Michel,
by the bishop of Beauvais, by a physician, three surgeons, and, to give
weight and force to the testimony, by nearly a whole regiment of soldiers,
who were quartered in the town in which she lived.   "To whom," says
Gibelin, "do I, the author of 'Le Monde primitif,' owe my existence?
To Mesmer, the saviour of men !"   This individual was no vulgar dupe;
he was a royal censor, honorary president of the Parisian museum, and
member of several academies.   Shortly after the publication of his ap-
peal, he died whilst under a course of magnetic treatment, and instantly
the following paragraph went the round of the anti-Mesmeric journals :
" M. Count de Gibelin vient de mourir, gueri par le magnétisme animal."
An examination, however, proved that he had long been labouring under
organic disease.

The mystery in which Mesmer enveloped his practice was well calcu-
lated to sustain the interest which his first appearance had excited.   For
the treatment of patients he fitted up a spacious apartment, in which a
perpetual twilight was ingeniously maintained; the air was impregnated
with the most exquisite perfumes, and every now and then strains of
music (in which science he was a proficient) stole on the ear of the lan-
guishing and susceptible invalid.   In the middle of the room was placed
a circular vessel (*le baquet*), containing bottles of water which had pre-
viously been magnetised: the lid was perforated for a number of curved
and moveable iron rods, which branched off in every direction, and the
extremities of which were grasped by the patients, who thus stood in a
circle, sometimes holding each other by the hand, and forming what was
called "the chain."   It would seem that Mesmer was not present during
the first stage of the magnetic operation; he reserved his interference
till it had brought about a crisis, when, arrayed like a magus, he stalked
in, waving a mysterious wand, by the motions of which he decided the
catastrophe of each individual case.   On first standing round the baquet,
the most various symptoms were developed: some of the patients ap-
peared apathetic or indifferent; others were slightly convulsed; as the
excitement increased, particular individuals were observed to rush towards
each other, with smiles and expressions of affection, seeking mutually to
mitigate the violence of their crises: as soon as the disorder and confu-
sion were at their height, the majestic figure of the great magnetist was

observed gliding towards the scene, his wand upraised to stay the storm ere it reached an uncontrollable pitch. It is said in the Biographie Universelle, that he had confederates amongst his patients, who set the example of blind obedience and resignation to his wand and will immediately on his appearance, and whose tacit cooperation cost him more than 100,000 francs. Certain it is that no sooner did he approach the baquet, than the tumult began to subside; the patients turned their loving regards from each other to their common magnetiser, who now put his finishing hand on the magnetic process, giving it such a termination as seemed to him best. Where the case was particularly interesting, or was capable of being made particularly profitable, the magnetiser performed the whole operation himself; the position on such occasions being "forehead to forehead, and foot to foot." When the patients laboured under very violent or unmanageable crises, they were carried into a chamber fitted up with mattresses and cushions for their reception, where, it appears, they were left to fight or kick it out as they best could. Young and attractive females the magnetiser generally preferred subjecting to the immediate or personal process; and the effects which it produced upon them are detailed in the following passage of the Secret Report of the Commissioners appointed, in 1784, to enquire into animal magnetism.

" The greater number of women who are magnetised are not really ill; they come for amusement, or for want of something better to do; others, who may be slightly indisposed, are not less fresh and vigorous: their senses are not impaired, their youth has all its sensibility. Continued proximity, contact, the communication of bodily warmth, and the mingling of glances, are the well-known ways and means by which nature always prepares to effect a community of sensations and affections. The man who magnetises has generally the knees of his female patient enclosed between his own: all the inferior parts of the body are consequently in contact. The hand is applied to the hypochondric regions, and sometimes over the ovaries. Touch is exercised over a large extent of surface, and in the neighbourhood of the most sensitive parts of the body. Frequently the man, having his left hand thus applied in front of the woman, passes his right hand behind her ; each then moves towards the other, in order to favour a double pressure; they approach as closely as possible; face touches face; their breath mingles; all physical impressions are instantaneously communicated, and the reciprocal attraction of the sexes acts, of course, with all its force. It is not extraordinary that the senses are now kindled; the imagination throws the whole system into disorder, suspends the judgment, and precludes reflection : the women can often give no account of what they experience, and are ignorant of the state in which they are. . . . When this state of crisis approaches, the visage fires by degrees, and the eyes light up with desire. The woman bends her head, and seeks to hide her forehead and eyes with her hand; a natural shame prompts her instinctively to conceal herself. Nevertheless, the crisis is continued, and the eye is troubled ; an equivocal sign of the total disorder of the senses. . . . The eyelids now become moist; the breathing hurried and irregular; the bosom heaves violently and rapidly, and convulsions and sudden twitchings take place in particular limbs, and sometimes all over the body. In lively and sensitive women, the last stage, the most agreeable termination of their emotions, is often a convulsion. To this state succeed languor, depression, and a sort of slumber of the senses; a necessary repose after violent agitation."

The commissioners do not appear to have regarded even these scenes as sufficient to determine their opinion. With Franklin, Bory, and Lavoisier at their head, they send to consult with the lieutenant-general of police. This personage arrives, and assuming, as we may suppose,

all his official severity, formally addresses Dr. Deslon as follows: "In my capacity of lieutenant-general of police, I demand of you whether, when a woman has been magnetized, and is in a crisis, it would not be very easy to seduce her?" To this simple question Dr. Deslon returned the very simple answer, "that it certainly would." Upon which the commissioners take their leave of him, and concoct their "Secret Report," in which they give it as their decided opinion that the practice of animal magnetism is immoral, and ought to be prohibited.

The personal career of Mesmer comprises, for some time, the history of magnetism. It appears that, during the first years which he spent at Paris, he received immense sums from his patients: he afterwards confessed that, in 1784, his income was not less than 400,000 francs. His reputation at length was such, that the government actually offered him 20,000 francs per annum, and 10,000 francs to build an establishment for pupils and patients, on condition that he should remain in France, and allow three persons appointed by the government to watch, and report on, his proceedings: nor were the advantages thus offered him to be annulled, should even the report of these commissioners prove altogether unfavorable to him. These terms were far from satisfying Mesmer, and he promptly rejected them; hoping, probably, by holding out, to obtain others much more advantageous. "The propositions made me," he said, " seem to me to err in having my pecuniary interest, and not the importance of my discovery, for their principal object. If my discovery is not credited, it is evidently wrong to offer me for it a pension of 20,000 francs annually: *if it is credited, the fate of humanity ought not to be sacrificed to the self-love of a few 'savants.'*" He means here his enemies of the scientific societies, with whom he was continually embroiled, and whose opposition drove him at one time to such an extremity that he declared that "he thought for three months without the aid of words." In his " Précis historique de la Découverte du Magnétisme Animal," he opens his mind still more freely to the government, stating " that he had always expected a recompense worthy of the French nation and of the monarch who governed it; that it was delicacy alone which indisposed him to receive a sum to defray the expenses of an establishment, and that he wished to hold, as a direct gift from the munificence of the state, a *territorial possession*." " I well know," he adds, " that the sum which I demand is considerable; but I also know that my discovery is beyond all price. In the eyes of your majesty," he continues, addressing the king, "*four or five hundred thousand francs, more or less*, well employed, are nothing: the happiness of your people is all. My discovery ought to be received, and I recompensed, with a munificence worthy of the monarch to whom I shall attach myself." This was written in 1784, yet, so late as 1818, we find Wolfart, professor of medicine in the university of Berlin, exclaiming, with indignation, " And Mesmer is accused of having been avaricious!"* The French government, weak as it was at that time, appears to have known the value of "*four or five hundred thousand francs, more or less*," (as well it might, considering the state of its exchequer,) and accordingly Mesmer's tempting bait was not ho-

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* Annals of Vital Magnetism, vol. i. part i. p. 12.

noured by even a single nibble. In a pet, the philosopher determined to
withdraw from ungrateful France, and leave her unmesmerised sons
once more a prey to every disease : he accordingly retired to Spa, where
he was shortly followed by numbers of his disciples. In his absence,
Deslon, his early convert, announced to the Faculty of Medicine at
Paris that he was acquainted with Mesmer's discovery; and, in effect, he
fairly stepped into the latter's shoes, and carried on his course of treat-
ment. As soon as this news reached Spa, the persecuted fugitive was
seized with an indignation which knew no bounds: he at first appeared
crushed by the weight of this new misfortune; then he exclaimed repeat-
edly that he was betrayed and ruined; that he had been perfidiously
robbed of the fruit of his long watchings, of his precious discovery, his
sacred property.* It was now that his disciples, to console him in his
tribulation, and recompense in some measure his merits, as well as at the
same time to secure for themselves what they imagined was an inestima-
ble prize, determined to raise, by contributions of not less than 100 louis
d'ors each, the sum of 240,000 francs, to purchase from Mesmer the
knowledge of his theory and practice. A subscription was instantly
entered into, and 90,000 francs more than was originally proposed were
poured into the pocket of the philosopher. As soon as he had instructed
his subscribers in such of his practices as he found it convenient to make
them acquainted with, he forbade them to make public, or indeed to
communicate to any person, anything he had taught them; and, when
they refused to obey this preposterous injunction, he accused them of
wronging and swindling him, and affirmed that they had all entered
into a solemn engagement not to reveal his mystery; an affirmation
which was utterly false.† After a great deal of wrangling and invective,
he proposed that subscriptions, to which no person was to contribute less
than fifty louis, should be entered into in the principal cities of France :
half of the produce of these subscriptions to accrue to him, and the other
half to go towards diffusing a knowledge of his discovery. His disciples,
however, refused to listen to such terms; and Mesmer, totally disgusted
with the treatment he had received at the hands of an ungrateful world,
took a final leave of his adopted country, complaining, wherever he
went, that his discovery had been wrested from him, contrary to all jus-
tice, and in violation of all the laws of honour. On the other hand, the
purchasers of his secret were equally dissatisfied with his conduct: one
of them, M. de Bergasse, publicly attacked him ; and another, Berthollet,
the celebrated physician to the Duke of Orleans, at first a regular disci-
ple of Mesmer, was so thoroughly undeceived by the initiatory process
(price 100 louis d'ors), that he published a declaration, utterly condem-
natory of the whole Mesmerian system, and terminating thus: " I de-
clare, in short, that I regard the doctrine of animal magnetism, and the
practice to which it serves as a foundation, as perfectly chimerical."

Notwithstanding the checks which his own sordid conduct and the
defection of some of his more noted followers gave to the system of
Mesmer, such was the infatuation of the public and the morbid excite-
ment of the times, that it still continued to flourish. Modified by

* Bertrand, p. 48.
† For the particulars of this dispute, see Bertrand, p. 52.

Puysegur, it found refuge in somnambulism from the blows aimed at it
by the commissioners of the Faculty and of the Academy, which were
tolerably effective in demolishing its early pretensions.   France, as
might be expected, was the hotbed where it principally flourished; but
stray seeds were blown over to Germany, where, in 1787, we find
Gmelin magnetising, or, as he calls it, "manipulating" a host of women
at Heilbronn and in its neighbourhood.   Nor did the Straits of Dover
present any effectual barrier to its propagation into England, where, in
1788, Maineduc, a pupil of Deslon, is represented by Hannah More as
making 100,000l. by its practice;* a success which fully explains the
recent invasion of this country by the Baron Dupotet de Sennevoy.
About the period in question, an immense sensation was created by
animal magnetism, in the provinces as well as in London; but it was
merely ephemeral, and scarcely any records have been preserved of it.
A person called Holloway is said to have realized a considerable fortune
by giving lectures on the subject, to which the admission-fee was five
guineas.   But the most extrordinary performers with the animal magnet
were a Mr. and Mrs. de Lauterbourg, residing at Hammersmith terrace,
of whose wonderous cures a Mrs. Pratt, 41, Portland place, Marylebone,
advised the Archbishop of Canterbury, in a letter dated June 21st, 1789.
After this letter comes a list of cures, and before it is a paragraph, in-
forming the reader that the publication has been issued quite contrary to
the will of the divine M. de Lauterbourg; but that the philanthropic au-
thoress prefers risking his displeasure to hiding any longer his miraculous
powers from the public.   De Lauterbourg's house at Hammersmith was
beset by crowds seeking admission, either out of curiosity or for medical
relief; and entrance tickets, which he gave away, were sold for from one
to three guineas each.   Mrs. Pratt begins her address to the archbishop
by announcing that both Mr. and Mrs. L. had been rendered by God
"proper recipients to receive divine manuductions."   She proposes a
public thanksgiving for the blessings they dispense, and a form of prayer
for their continuance.   "Let us join," she says, "in prayer and praise
to have this most glorious blessing continued, lest our candlestick be re-
moved from us, which I most ardently pray the Lord Jehovah to avert."
Mr. and Mrs. de Lauterbourg cured two thousand people in six months;
they were not at all particular in selecting cases, restoring indiscrimi-
nately the "deaf, dumb, lame, halt, and blind," young men dying of
scrofula, and women possessed with devils.   Their method of treatment
was very mild, as we learn from the following case, published by Mrs.
Pratt: "Mrs. Hook, stable-yard, St. James's, has two daughters, born
deaf and dumb.   She waited on Mrs. de L., who looked at them with an
eye of benignity, and healed them.   (I heard them both speak.")
   About 1790, various tracts on magnetism were published in London,
the authors of which, after roundly abusing each other, asserted, each of
them, that he alone was the true prophet, and that all the rest were un-
magnetised heretics: they laid down their premises thus: "It is now
generally admitted that there is a plenum or universal fluid," &c. &c.
Shortly afterwards, tracts and tractors, magnetisers and magnetised, dis-
appear altogether from the scene, and England resumes its wonted

quiet.—Such was the farce of animal magnetism as first acted in this country: after having caused great excitement, it sank rapidly into forgetfulness, there to remain till revived in our days by a company of actors far more philosophic, profound, and learned, doubtless, than their rude predecessors; equal to them, certainly, in every histrionic qualification, but unhappily even less successful with the public.

Shortly after Mesmer had retired from France in disgust, the French revolution broke out, and the universal fluid was lost sight of in the universal commotion which ensued: what its venerable proprietor did with himself and it during the troublous times which quickly followed his second exile, we have not been able to discover. Shortly after the commencement of the present century, however, we find him and his tub in Switzerland, busily engaged, though, of course, on a very limited scale. He died in comparative obscurity, on the 5th of March, 1815. Dr. Hirzel, of Gottlieben, thus announces his decease to Wolfart: "Yesterday morning, at eleven o'clock, it was my destiny to close the eyes of the greatest man that the world ever produced."* His funeral sermon, a "remarkable and touching" composition, was preached by a young priest whom he had converted to magnetism, and who was indebted to him for many important revelations concerning "religion and nature." The Berlin professor of medicine celebrated his apotheosis in lofty rhyme.

If we were not treating exclusively of animal magnetism, we should be justified in maintaining that here human folly and credulity must have attained their acme; but it is the peculiarity of this interesting subject that, on examining it, we find no limit to absurdity; no climax beyond which some one does not leap into still more mystic regions, beyond whom, again, we descry some still bolder head of somnambuliser or somnambulist in the distance.

Wolfart's Annals contain dull letters from Mesmer, written in bad German. In No. 283 and No. 284 of the "Morgenblatt" are extracts from a lecture on the character of Mesmer, delivered at Zurich, by Dr. Egg. von Ellikon, who made his acquaintance in 1804, and who was afterwards frequently in communication with him: this critic is evidently impartial, and we shall fill the very limited space which we can afford further to devote to the great father of animal magnetism, with his observations. He describes him as an old man of a venerable appearance, talkative (especially when the subject of conversation was his own merits and discoveries), and assuming towards his patients, and indeed whenever the practice of magnetism was mentioned, an air of mystery which was altogether repulsive. He was accustomed to speak with the greatest contempt of those who differed from or opposed him, and was never tired of sounding his own praise, and of dwelling on the benefit which his magnetic discoveries had conferred on mankind. In his sitting room hung a painting in which he was represented as the good genius of the world, celebrating the triumph of animal magnetism over medical science. He was in the habit of presenting those who made his acquaintance with a print of himself, under which were some French verses, extolling him in the most fulsome terms. When his discoveries were the subject of discussion, he invariably finished it by a violent tirade against the ingrati-

* Wolfart's Annals, vol. i. part i. p. 13.

tude of the world, and the persecution he had suffered from the medical profession: medical men he called poisoners, and all their drugs, poisons; against all modern magnetisers, too, he was highly incensed, accusing them either of not having been able to understand him, through stupidity, or of having betrayed him.   Bitter were his complaints that the somnambulisers were ruining the science, and doing more harm to the good cause than the most deadly blows of its most vehement adversaries.   He said once to Dr. E., " It is true I am old, and may yet live many years; but I know, for certain, that I should live ten years longer than I now shall do, if a surgeon had not once bled me when I was young."   Midwives and man-midwives he classed together under the name of privileged murderers of mankind.   The tying of the umbilical cord he held to be the cause of the small-pox and of all hepatic diseases, under which he classed almost every chronic malady.   Beyond his own theory and pretended discovery, he knew and cared about nothing; his reading was confined to two or three newspapers; of the progress of science he was altogether ignorant; and even his political opinions, strange to say, were modified by his peculiar views, and he actually advocated a political revolution and reorganization on magnetical principles.   He pretended that he could only think in French, and that he translated from the French whatever he wrote in German.   When Dr. E. first became acquainted with Mesmer, he was doubtful what to think of the effects of animal magnetism upon the human system.   Mesmer, of course, laboured hard to win over the waverer; but the latter is obliged to confess that, the more he now saw, the less he believed: it seems he would have been a convert had not Mesmer prevented him.   As the two were one day walking together, Dr. E. asked the philosopher why he always ordered his patients to bathe in river water, and not in spring water?   The latter answered, " Because river water is exposed to the sun's rays."   " I know," observed the other, " that river water is sometimes warmed by the sun, but not so much so that you are not frequently obliged to warm it still more, and therefore I do not see why warm spring water should not often be preferable.   " Dear doctor, the cause why all water which is exposed to the rays of the sun is superior to all other water is because it is magnetised.   Twenty years ago I magnetised the sun, and since that time," &c.————

Having disposed, we hope conclusively, of Mesmer, we now come to speak more particularly of the nature and progress of the system which he engendered.   To treat first, then, of the theory of Mesmerism.   The founder of the system pretended, as we have seen, that the entire universe was plunged, as it were, into a vast ocean of fluid, which penetrates it throughout, and produces in it all the phenomena which we observed around us.   This fluid, he continues, is the medium of an influence which the heavenly bodies, the earth, and animated nature continually exercise upon each other.   The human body has properties analogous to those of the magnet; it has poles "*également divers et opposées;*" and it can operate upon the universal fluid.   " By means of magnetism, the physician is acquainted with the state of health of every individual, and perceives with certainty the origin, nature, and progress of the most complicated maladies: it prevents their increase and effects their cure,

without exposing the patient, of whatever age, temperament, or sex, to any danger. Nature offers in magnetism a universal method for curing and preserving mankind."* This creed was fully adopted and professed by Wolfart, Ziermann, and indeed the whole school of Berlin, which, as we have given the reader numerous opportunities of seeing, speaks of Mesmer as of a being whose dogmata are sacred, and whose very hints and incidental observations (however apparently trifling or contradictory) deserve to be treasured up as golden rules. It was according to this system that Wolfart, Royal-Prussian professor of medicine in the university of Berlin, and knight of the iron cross (second class), treated in the Mesmerian hospital, and in his private practice, in the year 1820, 1428 patients afflicted with all kinds of maladies, mental and corporeal, external and internal, febrile and inflammatory;† of whom, according to his own report, 632 recovered, 599 improved, 140 remained uncertain as to whether they were cured or no, 24 got worse, and 13 died. Of the other twenty no account is given. Wolfart, though a blind follower of Mesmer, does not content himself with the letter of the law as laid down by the latter, but seizes its spirit, and works it into aphorisms and axioms of his own, from which we may learn more closely the view he takes of the Mesmerian philosophy and practice, and of which the following are specimens.

" Mesmerian or vital magnetism, is neither a medium nor a matter, nor a power of itself, but is the nominal definition of the relative changes taking place in the physical and psychical or moral world."‡ Now this means, if it means anything, that no act, motion, or change whatever takes place except by means of Mesmerism. It asserts, as plainly as an abstract position can, that Lisbon was swallowed up by Mesmerism; that a comet clashing against a planet is Mesmerism; that the battle of Waterloo was Mesmerism; that Shakspeare mesmerised when producing his immortal poems; in short, that the first great Mesmer was the Creator of the universe. But it has not been left to the adversaries of magnetism to draw these deductions from the position above laid down.

In a work entitled "Considerations on Animal Magnetism, especially in regard to numerous Phenomena of the Past and Present connected with it; by J. A. L. Richter, con-rector of the principal ducal school at Dessau," published at Leipsic in 1817, we find the author thus stating the grand object of his study: " It consists in nothing less than in the solution of many enigmas of human existence, and particularly of the enigmas of Christianity, on the obscure and mystic parts of which a light is now thrown (by magnetism, of course,) which permits us to gaze clearly on the secrets of the mystery." He then proceeds to state that all the miracles of the New Testament were performed by means of animal magnetism; which is also accountable for all the wonders and witchcraft of the middle ages, and which he finally declares to be no other than Omnipotence itself. " Magnetic instinct" is the principle by which he explains the creation and conservation of the world, and amongst those who have conspicuously manifested it he enumerates, almost in the same breath, Adam, Müller, Madame von Krüdener, St. Paul, Luther,

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* Mesmer sur la Découverte du Magnétisme Animal, pp. 6 and 74.
† Annals, vol. v. part i. p. 38.   ‡ Annals, vol. i. part ii. p. 49.

a number of old women, Jesus Christ, and, finally, the Almighty. This author, we must not forget to remark, is repudiated by the pure Mesmerians, and belongs to the new and improved school of magnetism, that of the somnambulisers: we already begin to see that Mesmer is respectable and innocent compared to some of the disciples of this latter sect.

We must content ourselves with giving one more only of these aphorisms of Wolfart; a rich specimen, which we shall leave without note or comment.

" When the vital dance of the viscera flags, we must lend it a helping hand. We must strike up, and play vigorously, joyously, and in elevating harmony : then the organs which were fatigued, or disordered, or out of tune, will begin to dance regularly in intertwining mazes, until at length they will sing to themselves the appropriate rhythm, without requiring the aid of our medical music. But, were we to fiddle unmelodiously, or too violently, the viscera would remain deaf and unmoved in their places, or would fly the scene, and there would be no dancing. The best medicine of the ordinary kind can only strike up a tune, and that truly is much; but magnetic medicine can not only strike up a tune, it can lead and join the dance ; and that is much more."*

According to Mesmer and his more faithful followers, magnetism only produces evident symptoms on those whose health is deranged, and often not even upon them; though this is quite contrary to the doctrine of more modern practitioners, who profess to be able to mesmerise where Mesmer himself would be powerless, and who magnetise indiscriminately both those in and those out of health.† Dr. Ziermann, an excellent writer, as far as style and method are concerned, in Wolfart's Annals, states that a gradually diminishing influence of magnetism upon the patient is the best indication of his improvement; that the patient, in fact, is not cured so long as he is magnetisable. He expressly says that, as a general rule, the healthy subject is not capable of being magnetised ; and he adds, what is doubtless very true, that the attempt to mesmerise a girl who is in health may often have the effect of precipitating her into a disease.‡ The hopes which some of Mesmer's followers entertain of the magnificent results of his system are the best indication of the exalted opinion they hold of its essential nature and practical bearings. Says Dr. Riecke,§ of Stuttgard, " I am much too feeble to have even a presentiment of the tremendous results which must necessarily flow from Mesmerism, much less am I capable of describing them." He states that he formerly wandered in a medical morass, led by an *ignis fatuus;* that he sought for a guiding star, and "at length with shouts of joy hailed it beaming bright on the horizon, in the shape of Mesmerism, which is to remedy all our defects." The first thing which the new star promises is to blight all apothecaries, and close all apothecaries' shops. Dr. Riecke never enters one of the latter without a secret shudder, and without fancying that he is in a witch's cave. The only difference, he says, between the ancient and modern apothecaries is, that the former sold poison to

* See Wolfart's Annals, vol. ii. part ii. p. 29.

† Dupotet says, " It is a great mistake to suppose that magnetism only acts on weak and nervous persons. I have often magnetised men of the most robust habit, and produced on them more remarkable effects than on persons of less robust constitutions. No one should ever be considered an unfit subject." (p. 154.)

‡ Annals, vol. v. part ii. p. 5.   § Annals, vol. ii. part ii. p. 2.

those who asked for it, and that the latter cram it down the throats of those who ask for any thing but it.   Mesmer himself was not more violent in his language towards the medical profession than this, his professional disciple, who exclaims with Seneca: " Innumerabiles esse, morbos miraris?   Pharmacopolas numera!"   "How truly grand and sublime," he continues, " is the aspect of Mesmerism, compared with the obscenity of medicine!"   He next proceeds to lay the foundation of a magnetic pharmacology; and the medicament which he exclusively preaches up is, of course, the "physico-dynamic influence of one organism over another."   Man can exercise, he says, this influence over other animals, and other animals over man.   If you stare courageously at a wild horse, you tame him.   The Tartar, who is always on horseback, becomes in time something of a horse himself.   The shepherd's occupation renders his character sheepish; the swineherd assimilates himself to the swine he tends; the gosherd is as stupid as her geese; and the Greenlander, who lives on nothing but the flesh of the sea-dog, becomes in time a sort of sea-dog himself, "both in body and soul."   To prove the curative influence of one organism over another, he asserts that a cat is an excellent remedy in typhus; that a rabbit (and no other animal but a rabbit) resolves indurations in the testicles, if it be laid upon them some hours a day; that turtle-doves (and turtle-doves only) are capable of flying away with the erysipelas, if left in contact with an erysipelatous patient.   A vegetable organism, he continues, is also capable of exercising " a physico-dynamic" influence over an animal one; and such influence will be found far more powerful and efficacious than the operation of its cold remains and ashes, of whose medical virtues the foolish apothecary boasts.   The following is the system of treatment which Dr. Riecke proposes for a phthisical patient: First regulate his diet, and the temperature and composition of the atmosphere he is to breathe; let him be generally magnetised twice a day, and let him sit for five minutes every two hours, in a baquet composed of two stems of digitalis, one henbane and three valerian plants, with perhaps the addition of a couple of rabbits; finally, let him wear, if circumstances require it, a magnetised woollen jacket, and a belt of zinc.   The magnetic virtues of light, we are informed, are undeniable; and concentrated green light is proposed as an excellent application for ulcers.   We cannot pursue the author in his discussion on the propriety of curing diseases by thunder and lightning, electricity, galvanism, mineral magnetism, sound,[*] odours, vapours, &c.; nor shall we at present attempt to enforce on the governors of our hospitals obedience to his injunction, that operative surgery be instantly taken out of the hands of the " imps of torture" (*Marterknechte*) who at present exercise it, and assigned to Mesmeric surgeons. The author winds up with a dream in which he realizes his system, (he theorizes only when wide awake,) and concludes by telling the reader, who should ask him when all this will be realized, that he does not know. But, he continues, "Everything has its time.   When Peter preached at Jerusalem, 10,000 Jews were converted in a single day, but now there

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[*] The hydrogenic harmonica, the jew's harp, the report of cannons, and the *tout ensemble* of an operatic orchestra are enumerated as specimens of sounding remedies, and the two former particularly recommended.

are 10,000 preachers, and not one Jew is converted. When Luther held forth, whole countries came over to him at once, but now a whole religious sect has the greatest difficulty to persuade a single individual to join it. I say to thee, Everything has its time, and Mesmerism will have it also, and that great time is approaching." Such rhapsodies as these only become worthy of our attention, as forming the first article of a periodical which is the organ of a numerous school, and which is edited by a professor of medicine, who has treated thousands of patients according to the principles which it embodies, whose magnetic experiments have been honoured by the presence of such men as Schleiermacher and Steffens, of whom we have never seen any condemnation by his colleagues or by the Prussian government, and whose magnetic cures we find duly registered in Hufeland's " Library of Medicine," amongst the other authenticated and important discoveries of the current year.

Mesmerism was not everywhere in Germany so faithfully and fantastically followed out and expounded as by the above professors. If some of its disciples saw in it a subject for the wildest, most impracticable, and incoherent speculations, others were not wanting who interpreted its phenomena in the grossest and most disgusting manner; and the materialism of these is as revolting as the flights we have been examining are ridiculous. The school to which we now allude is that of Gmelin, Kluge, and others, who appear to reject all the transcendental portion of Mesmer's philosophy, and seek for an explanation of all magnetic phenomena in the atmosphere of the nerves; for the demonstrable existence of which they appeal to the experiments and discoveries of Reil. This is not Mesmerism modified, but Mesmerism abolished; or, if such a change be regarded as part and parcel of the development of the science, then is its progress so Protean that, at each succeeding step, not a vestige is left of its former self. The fact is, we lose here all traces of the universal fluid, and of the " physico-dynamic influence" which had existed from all time, and had acted through all space; and we find installed in their stead a nervous atmosphere, upon which it is impossible to philosophize with any effect. Those of whom we now have to treat have deserted Mesmer in practice as well as in theory: they have given in to the fatal heresy of somnambulism; but this is not our present topic, which is the simple enquiry, not into what animal magnetism is, but into what its supporters say it is; and we shall find that they are not nearly so unanimous on the subject as is the public. When Gmelin, a plodding, plain-speaking German of the old school, is asked what animal magnetism is, he says, "The act of magnetising and the act of generation are essentially the same, and differ only in respect to the vehicle of communication." (" Die Begattung ist im Grunde nichts anders als thierischer Magnetismus, und unterscheidet sich nur durch das Vehikul.") If you remark, that " to vouch this is no proof," he is quickly ready with the latter, which he ingeniously finds in the fact that " Beischlaff" and "manipulation," (he terms magnetising "manipulating,") produce upon him precisely similar effects,—viz. weakness, indigestion, and general weariness. He states his evidence in language which we cannot venture to translate: " In der Nacht *cohabitirte* ich in der Absicht mich noch mehr zu schwächen; es geschahe mit Ergiessung," (p. 45:) he found himself the next day magnetically impotent! After manipulating, he does

not feel the slightest inclination to sexual intercourse. His researches in the *science* are all, as may be supposed, of the most practical kind. Neglecting altogether those sublime enquiries into the nature of the fluid in which the universe is immersed, and rejecting unceremoniously all physico-dynamical theories, he institutes experiments to determine whether, if he manipulates a woman too vigorously, the perspiration which ensues is any barrier to the communication of the magnetic fluid. It is a *fact*, he solemnly assures us, that he could manipulate any woman but his wife. The reader may wish to be informed what Gmelin's particular manipulations were: we are ignorant; but, for the satisfaction of the scrupulous and delicate, he takes care to state that, whatever they were, they excited in him no lascivious ideas, "—viel weniger eine samenergiessung!" (p. 28.) All his writings show to what abuses the practice of this *science* of animal magnetism may give rise, concerning which the Baron Dupotet de Sennevoy exclaims, " If any person should ask what is the moral tendency of the doctrine of animal magnetism, I should answer that it obviously tends to establish the spiritual ascendancy of man over those material conditions which, in his ordinary state of being, fatally restrict the apprehensions, capacities, and comprehensions of the soul." The German would seem to come to a somewhat different conclusion, in an aphorism which he publishes without the slightest hesitation, and which is " that the bestial in man borders on the angelic." (" Das Thier im Menschen gränzt an den Engel." p. 206.) Such a writer as this is, in one sense, most precious: not that we could for an instant think of accusing *all* magnetisers of similarly revolting views; but that he plainly shows what this animal magnetism is easily capable of becoming, and justifies us in concluding that, if a blockhead, who evidently means no harm, proceeds to such extremes, there must exist amongst his brethren many " a closet lock-and-key of villanous secrets." We do not suppose, however, that Gmelin tells the world all he witnessed: " this honest creature, doubtless, sees and knows more, much more, than he unfolds;" but we must not quarrel with him on this score, for he confesses that he has seen one woman thrown by a magnetic process into a *furor uterinus*, (p. 119;) and that he himself magnetised away the modesty of at least a couple of girls. His notions on somnambulism we shall have occasion to mention when we come to discuss that spurious branch of Mesmerism: for the present we must leave him, merely observing that he declares upon his honour (" betheuert bei seiner Ehre") that, as a matter of taste, he would as soon " manipulate" an old woman of seventy as a girl of seventeen.

Kluge, the principal surgeon to the Prussian Medico-chirurgical Pepinière, in the well-written and laborious production of which the title is given at the head of this article, professes also, as we have stated above, the doctrine of a nervous atmosphere, which he appears to believe is capable of being bottled up in one subject, and then decanted into another, and which he considers as the agent of all magnetical operations. The character and situation of this writer preclude the possibility of his publicly indulging in such confessions or conceptions as those of Gmelin: accordingly, we hear nothing of the latter's very peculiar ideas, but he is repeatedly quoted as a respectable authority. Kluge, who, with the exception perhaps of Ziermann, is the least irrational of all the

writers whom we have so far passed under review, is nevertheless as childishly credulous as Riecke is crazy and Gmelin disgusting. Such stories as the following, which is given as a proof of the existence of a nervous atmosphere, abound in his work: " A French nobleman of high rank (De la Tour Landri), during a visit to London, produced such a remarkable effect upon a young shoemaker, of whom he had ordered a pair of shoes, that the latter became senseless, fainted, and bled profusely at the nose, both when he took the measure and when he brought the shoes to be tried on. Surprised by the repetition of this scene, De la Tour made enquiries respecting his extraction, and found that he was born in France, but had been taken, in his childhood, first to Bohemia and then to Holland. De la Tour now recollected that the son of a sister of his, who had died in childbed, had been consigned, immediately on her decease, to a nurse, of whom and of her charge nothing had been heard since that time; he also remembered that the child was born with a remarkable mole between his shoulders. He instantly examined the young shoemaker, found that he bore the above mark, and convinced himself, after a few rigorous enquiries, that this person was no other than his nephew, the Baron de Vesins."

To prop up his theory of a nervous atmosphere, and of the effect of its mesmeric communication, Kluge actually relates again the old story of the girl married at Paris against her will, who dies or appears to die, is buried, and afterwards disinterred and resuscitated by her lover; and he claims all the merit of this resuscitation for magnetism.*

Kluge discusses at some length the relation of the ganglionic to the cerebral system, and the influence of the passions or will upon the operations of the nervous atmosphere. On this subject he mixes up some truth with a number of fantastic arguments and illustrations, citing instances of persons who could produce or suppress at pleasure, merely by exerting volition, morbid feelings, and phenomena. He is acquainted with men of a lively imagination and a firm will, who, by merely thinking on it intensely, can produce, in a few seconds, an erysipelatous inflammation in any part of the surface of the body they please. He is far fonder of stories of this kind, illustrating, as he thinks, the nature and functions of the nervous fluid, than of attempting to explain to us its *modus operandi;* and we are left quite in the dark as to how it drew blood from the nose of the Baron de Vesins; or how it revivified the Parisian girl; or how the will prevails upon it, as in the last-mentioned cases, to exhibit erysipelatous or other morbid phenomena.

Kluge wrote at Berlin in 1811: we leave that city, and arrive at Jena in 1822, and find that there, in the hands of Professor Kieser, Mesmerism has assumed another new face, and resembles no more Kluge's idea of the science than it does that of Mesmer, to whom indeed it is now merely indebted for its name. The third appearance of this strange essence is in the shape of a "telluric spirit;" and, in accordance with this new name, somnambulism is called "telluric life."

Kieser does not confine his magnetic phenomenon to the earth, although the "telluric spirit" plays the most prominent part in his sys-

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* Wolfart has magnetically resuscitated a boy who had been fairly drowned, having been under water half an hour. (ΛΣΚΛΗΠΙΕΙΟΝ, p. 920.)

tem: he makes it out that we are magnetised by the moon every night, and unmagnetised by the sun every morning. Opinions somewhat similar to his are entertained by Nees von Esenbeck; and this school, to which we believe Kerner and Eschenmayer more or less belong, presents the latest phase of magnetism, and is considered to have raised the science to a very high degree of perfection. We cannot here treat at any length of the doctrines of these philosophers, which are much more complex and complete, much more harmoniously developed and carefully set forth, than any we have previously examined, and which enjoy the sanction of some of the highest names in Germany; but we shall shortly have some very edifying opportunities of knowing them by their fruit. In Kieser's scheme, we find nothing worth notice on the *modus operandi* of the 'telluric spirit;' of the action of which, again, we find no other result mentioned than somnambulism.

After having detailed the fate of Mesmer in his native country, where we find that he has been first assassinated, and then magnanimously or magnetically brought to life again by each of his successive friends, with the exception of one faithful band,—so that, were Kluge now to drag him from his grave at Frauenfeld, in Thurgovia, he would neither know " himself nor feel himself to be,"—let us next pursue the very different course which his doctrines took in France, where, in the national spirit of scepticism, we shall shortly find disciples denying their master, and mesmerising without the aid of any fluid, "universal," "nervous," or " telluric." Deslon, one of the earliest converts, and at first an intimate friend of Mesmer, was an ardent advocate of the "universal," and does not seem, on any material points, to have differed from his preceptor. Awkward circumstances, however, compelled him to stretch his theory now and then. Having undertaken to demonstrate to the commission, composed of Franklin, Lavoisier, &c., that an apricot-tree, magnetised by him in an orchard at Passy, near Paris, would throw one of his male patients into a crisis as soon as he touched it, it unluckily happened that the patient, who was introduced into the orchard with his eyes bandaged, and led from tree to tree, wanted discernment to distinguish the right one, and fell into a fit under one standing four-and-twenty feet from that which Deslon had "manipulated."[*] To explain this distressing mistake, Deslon had recourse to the idea which he seriously insisted on, that the apricot-tree had magnetised all the others; which explanation was doubtless suggested to him by the circumstance that the patient had manifested critical symptoms, of one kind or other, at every tree he came to. Such conclusions as these show that Deslon was ill calculated to administrate the new system in the absence of its author. M. de Jussieu, who formed one of the above-mentioned commission, was a partial convert to magnetism, and published, in 1784, a separate report in its favour; which, however, is so qualified, so opposed to all the essential points of Mesmerism, and based on such scanty evidence, that the *science* is more injured by one such advocate than by twenty violent adversaries. The following is the conclusion to which he arrives:

" The theory of magnetism cannot be admitted so long as it is not developed, and

* Bertrand, p. 113.

supported by solid proofs. The experiments made to establish the existence of a magnetic fluid prove only that one man produces upon another, by friction, contact, and in some rare cases by simple approximation (*rapprochement*), a sensible effect. This effect, attributed to a universal fluid, which has never been demonstrated, is evidently owing to the ANIMAL HEAT existing in the body, which emanates from it continually, is carried to a considerable distance, and may pass from one body into another. Animal heat is developed, augmented, and diminished by moral and physical causes: to judge by its effects, *it partakes of the properties of tonic remedies*, and produces, like them, results salutary or prejudicial, according to the quantity communicated, and to the circumstances under which it is employed. *A more extensive and discreet use of this agent will render us better able to decide on its real effect, and on the degree of its utility.* . . . *No person ought to be allowed to practise magnetism, except under condition that he promptly publish an account of the method of proceeding he adopts.*"

Magnetic tractors, vases charged with mesmerian fluid, or mirrors reflecting it and throwing it in all directions, in short, all its magic apparatus, Jussieu sacrilegiously sweeps out of the temple of Isis. The votaries of health, too, who crowd around her shrine, he rudely pushes out of doors; telling the phthisical that they were better anywhere else, bidding the scrofulous and dropsical begone to the hospital, and giving the paralytic such cold comfort that they are fain to return to their miserable beds. The crises and convulsions, and indeed all the performances at the "tub,"—the cardinal points which constitute the soul of the system,—this sceptical believer decidedly condemns as extremely prejudicial, except in some very rare cases. To give a little original colour to his notions, he imagines that the animal heat may be the "electric fluid animalized," and disports himself in a lively description of its magnetic play. But all this is pure caprice; and, in fact, he only differs from his brother commissioners in the view he takes of four cases which they witnessed together at Deslon's; and these, even judging of them from his statement, were, as Bertrand observes, altogether inconclusive. Jussieu, however, has long been appealed to as an impartial witness to the truth of Mesmer's doctrines, although he denies them all, sets up a little scheme of his own, and can only cite four equivocal facts to support the latter, and justify him in dissenting from the opinions of the other commissioners.

One of the first revivers of animal magnetism in France after the revolution was Deleuze, who entertained the following notion of the nature of the magnetic fluid with which he operated; " I believe in an emanation from myself, because magnetic phenomena are produced without my touching the patient: *ex nihilo nihil*. I am ignorant of the nature of this emanation; I do not know whether it is material or spiritual, nor to what distance it can be made to extend; but this I know, that it is impelled (*lancée*) and directed by my will, for, when I cease to will, it ceases to act."

There is no case of individual delusion connected with the history of animal magnetism more painful to contemplate than that of M. Georget. Let us first hear what this writer has to say respecting the agency of the will in magnetical operations, as we shall shortly find that a fatal schism on this subject exists amongst the professors of the *science*. " It is necessary that the 'two parts' of the 'magnetic element' (he means the two individuals concerned in the operation,) should direct, as intently as

possible, all the cerebral action towards the production of somnambu-
lism; that both the magnetiser and the magnetised should will or desire
that it be brought about. *I have found nothing more easy than to esta-
blish this fact.* Whenever I was '*distrait*,' my thoughts wandering to
other things, or my mind ill at ease; whenever I did not direct my atten-
tion to the operation, I could often produce absolutely no effect.'' Here,
then, we have two somnambulisers laying down the law,—and this law
has the high sanction of no less a personage than the Baron Dupotet de
Sennevoy,—that the will is an essential agent in the magnetic operation.
The Baron is pleased further to inform us, ''that the operation may be
said to be almost purely intellectual; its success depending on the energy
of the will.''* But what says the plain-spoken Gmelin? He gives us
very clearly to understand that the operation is not '' almost purely in-
tellectual;'' and he states expressly that, as a magnetising agent, the
will is powerless (der Wille ist kraftlos). Mesmer and his disciples never
invoked the will, that we hear of, and got on very well without it; and,
moreover, Bertrand, a somnambuliser, whose work was published in
February, 1826, distinctly asserts that the influence of the will is a mere
fiction, that he has somnambulised numbers of patients without its aid;
and he further gives cases to prove its neutrality.† How are these con-
tradictions to be explained? Dr. Deleuze produces an effect by his will
exclusively, which Dr. Bertrand produces equally well, excluding his
will: for effects to be precisely similar, we have always been taught that
their causes should somewhat resemble each other; and here the only
solution of the difficulty, which we can think of, will be found in the
Latin law of one of the learned doctors, *ex nihilo nihil;* and it may very
possibly be the true one. Leaving them, however, to settle between
them this vital question, we return to M. Georget, who made the following
declaration on his deathbed: '' In my Physiology of the Nervous System
I boldly professed materialism; but, scarcely was it given to the world,
when new meditations on the extraordinary phenomenon, somnambu-
lism, no longer permitted me to doubt of the existence in us, and with-
out us, of an intelligent principle, altogether different from material
existences—*let it be, if you will, the soul, or God.* I have, in regard to
this, a profound conviction, founded on facts which I believe to be in-
contestible. This declaration will not see the light until there can be no
longer any doubt of my sincerity, or any suspicion of my intentions.''
Now, were the evidence on which this conversion is founded complete,
we should still be inclined to regard the latter with great suspicion, look-
ing to the manner in which it is detailed, and to the source from which
the evidence is drawn. The facts, one would anticipate, must have been
essentially very equivocal on which such a loose creed as this was
founded, (of which the vagueness strangely contrasts with the solemnity
of its avowal.) Nor is this anticipation false, as we learn from the
following extract from a speech of M. Velpeau, at the Academy of Me-
dicine: '' M. Georget became a zealous partisan of magnetism, after
having been its opponent, and admitted its truth in his work on the
Nervous System: he had performed experiments, and believed them in-
controvertible. M. Londe assisted at these experiments. Well, Georget

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* Dupotet, p.151.   † Bertrand, Preface, p. xxvii.

carried with him to the tomb his belief in magnetism; but M. Londe has outlived him, and you have heard him declare in this assembly that Georget and himself had been deceived, that they had been duped by some miserable creatures, who have since boasted of the circumstance."[*] What a satire is this on the manner in which pseudo-philosophers jump at the most serious conclusions! Here we have a "savant," whose only argument for the existence of his own soul and of a God, is derived from the tricks of a law student, who, having quarrelled with his friends, and lost all means of existence, feigned paralysis, and entered an hospital, where he soon became a noted performer of magnetic miracles! A magnetiser of high standing at Paris, Professor Rostan, entertains a theory of his art very similar to that of Kluge: he holds that the nervous fluid of the magnetiser, impelled by his will, may convey that will to the somnambulist; which is nearly tantamount to saying that a waggon carries the horses which draw it.

It is surely a sign of the worthlessness of a cause, when its advocates become less and less able plausibly to defend it; and that science must be radically rotten whose latest supporters are its worst. Now, this is the case with animal magnetism, which we confess has been propped by respectable names in its day, but which has now, in an evil hour, encountered the patronage of the Baron Dupotet de Sennevoy, whose officious assistance it cannot long survive. After a science has existed for two generations, we are justified in demanding, if not unanimity in its supporters, at any rate a definition from some one of them, and principally from the contemporary who has had the benefit of the experiments and arguments of all the rest. Nay, we are quite justified in denying the existence of a science of which there is no intelligible definition; for how can that proposition be even entertained, on the nature and identity of which it is impossible to obtain a distinct idea? We acknowledge that Mesmer was intelligible; that Wolfart's positions are perfectly comprehensible, absurd as they are; that the modern French school, too, lays down, for the most part, distinct premises; that accordingly, both in France and Germany, there are extant systems of animal magnetism, which one knows how to describe, and with which, consequently, we can practically deal. But, in whatever shape this unlucky doctrine may be met with abroad, it can assuredly lay little claim, in England, to either form or figure. Dupotet, in embracing it here, has squeezed the spirit out of it, and left its body without any marks or members by which to distinguish it. What are we to make of such expressions as the following? "Animal magnetism is that active principle which we possess within us, and which, under the energy of our volition, manifests itself by the effects it visibly induces."[†] "It is important to remember that the magnetic *power* does not consist in mere *gestures: another medium* is necessary, which the *manipulations* merely bring into play at the command of the will. This medium may be termed the vital principle, life spiritualized, universal, magnetic, or nervous fluid; *it matters not.* But, most assuredly, there is an emanation of a peculiar agent; for, *out of nothing, nothing comes.*"[‡]

* Lee on Animal Magnetism and Homœopathy, p. 44.
† Dupotet, p. 30.   ‡ Dupotet, p. 151.

With respect to the emanation aforesaid, of a peculiar agent, we have now a remark or two to make. Georget, Deleuze, Rostan, and Dupotet make this and the will essential to the performance of the magnetic operation, which with them is nothing else, and can be nothing else, but the action of the latter upon the fluid in question; but the great discoverer of Mesmerian somnambulism, Puysegur, not only attached very little importance to manipulations, but never had recourse to the theory of a nervous fluid; whilst Bertrand denies that either the latter or the will have anything to do with the production of somnambulism. Barberin somnambulised his patients by merely praying by their bedsides; and the Abbé Faria produced the phenomenon in question by commanding those whom he treated, in a loud and imperative tone, "to sleep."* Do not all these contradictions, both in theory and practice, plainly show that all the so-called magnetic phenomena originate exclusively in the imagination?

The doctrine of a magnetic fluid, however, is so vital a part of the present system of Mesmerism, that it is worth while to examine it a little more closely. Alleged proofs of its existence may be divided into three classes; viz. those derived from the cases of somnambulists who have seen it; those deduced from its isolation in metals, &c.; and those drawn from its pretended effects where the somnambulist was not conscious of the presence of her magnet. Now, with respect to the first class, Bertrand very properly observes, that a somnambulist will see anything, and that there is nothing she cannot be made to see. The lady always shows her gratitude to her magnetiser, by bringing him intelligence from somewhere or other, often from the other world, in confirmation of his theory. Where the operator deals in a nervous fluid, the patient sees it streaming upon her from the ends of her fingers: where he thinks proper to deny the existence of a fluid, she can discern nothing of the sort, and describes the somnambulic trance as being brought about by *very different means.*† Women, magnetised by disciples of Swedenborg, preached the doctrines, both metaphysical and religious, of the latter, and had visions confirmatory of his views. The peasant, magnetised by Puysegur, appears to have altogether lost his identity, and to have become part and parcel of the being of the latter. The Prophetess of Prevorst, who had a mystic tellurist for her physician, had interviews and long conversations with spirits, and talked very learnedly on her solar and vital circles, which have been only explained by Görres according to the principles of modern German philosophy. Finally, a religious lady at Weimar, who magnetised her maid-servant, was able, through the latter, to communicate with God himself, who used to appear to the girl, and talk to her in a very familiar manner.‡ Now, knowing all this, we are surely justified in denying admission to the evidence of somnambulists, who shut their eyes to see what they could not see with them open. With respect to the powers of magnetised water, magnetised handkerchiefs, magnetised sovereigns, &c., we doubt not their miraculous efficacy; but we cannot allow that magnetism has anything to do with it. Bertrand sent a

* Bertrand, p. 246.
† See Bertrand, p. xi.; who does not, however, inform us what these means are.
‡ See the work, Fingerzeige Gottes, &c.—Weimar, 1838.

magnetised handkerchief to a patient a hundred leagues off, and it somnambulised her instantly; nor could he at all account for this until he found that a non-magnetised handkerchief produced precisely similar effects. Mesmerised water produces most astounding phenomena, but common water is capable of causing precisely the same; and the former cannot at all compete with that drawn from the well dug near the tomb of the deacon Paris, in the cemetery of St. Medard, in the French capital, which one of the devotees of the said deacon could easily distinguish from all other water; although his brother, a decided adversary of Paris and his fanatical sect, tried to deceive him. Bertrand states that he instituted experiments on the subject, but was never able to produce any effect on a patient, when awake, by touching her, *unknown to her*, with magnetised objects. This writer formerly believed in the existence of a magnetic fluid, but changed his opinion in consequence of his own researches. He was a somnambuliser, who seems to have had less excuse for practising the art than its more ardent professors; for he does not appear to have anticipated any benefit from it, and he describes the painfully degrading scenes to which it frequently gives rise with the greatest *sang froid*.

The third class of proofs which we have to consider is that deduced from the direct influence which the magnetiser is said to be able to exercise over his patient, when he is absent from her. On this subject, Bertrand says that the utmost precaution is necessary, "when experiments are made respecting the production of somnambulism on persons who are adapted to this state, as it were, (*pour ainsi dire façonnés à cet état*,) by daily experience. It cannot be too often repeated, that a gesture or a glance of the magnetiser, *nay, even the mere thought occurring to them that he wishes to act upon them*, suffice to produce somnambulic phenomena."[*] He then cites a case in confirmation of these assertions, which is so conclusive, conveys such a perfect idea of the manner in which magnetic experiments are conducted, and throws such a strong light on the source of magnetic phenomena, that we shall translate it, with some abbreviation; convinced that one such statement made by a somnambuliser, in perfect simplicity and good faith, will save us the trouble of commenting on the crowd of "facts" of a similar nature, which have been published as the foundation of new and marvellous truths.

"I studied," says he, "during some time, the case of a somnambulist, Madame Chevalier, whom I did not magnetise myself, and on whom the *lady* who treated her exercised an influence which was really extraordinary. She caused, for instance, at will, the paralysis of an arm or of a leg, or simply of a hand or finger; she could deprive her also of speech, hearing, and smell. But her power was not limited to a local action; *she could paralyze, so to say, at a blow, all the parts of the body of the somnambulist, and throw her into a state of complete and general insensibility and immobility, which constituted a veritable lethargy*. In order that I might better be able to estimate the value of these marvellous appearances, Madame D. *was kind enough to enable me to reproduce them at will*, by putting me *en rapport* with her patient. However, my first care was to ascertain what share the imagination had in the production of these remarkable phenomena. It was customary, when it was wished to throw the patient into a lethargy, for Madame D. to signify her will by passing her

[*] Bertrand, p. 269.

hand quickly before her, from above downwards. After having several times made this *passe,* with a concomitant exercise of the will, and always successfully, I made it without exercising the will, and I succeeded just as well. I now tried the power of the will without the *passe,* but with no effect. Then, in order to ascertain whether the *passe* and the action of the will together would affect the patient, unknown to herself, I performed the usual operation, separated from her, first by a wall, and afterwards by a simple partition or a door; but always in vain. . . . The real cause of the lethargic phenomena was shortly revealed to us. Madame D., being one day forced to absent herself on business, *left her patient to be unsomnambulised by some magnetisers who were in the room.* I was there also, magnetising another woman, when suddenly Madame C. ceased to answer the questions which were addressed to her, and fell into the lethargy which it was usual to produce in her: it was immediately found that she was insensible. *This being clearly established,* I wished to see whether the other somnambulist *could give us any information in the manner in which it had been produced;* and I said to her, ' Look at Madame C.; tell me that which is taking place within her, and why she has fallen into her present state.' The women directed her attention as I had ordered, and, instead of answering me, fell herself into a *state of insensibility, and appeared, in short, dead.* I was not able to restore her for some minutes.* At length she was able to speak to me, and she said with a laugh, which was habitual to her, *(her intellectual faculties being in a state bordering on idiotism,)* ' Ah! you're not up to it; you'll have some terrible trouble. She's paralysed. Madame D. is only gone out to act upon her at a distance; and, if she doesn't return, you'll not be able to get her out of the state she's in.' I thought at first that this really might be the case; but time passed on, and Madame D. did not arrive, nor could she be found in the neighbourhood. She had been seen to leave the house, and go towards the place where she said she had business. I now began to be seriously uneasy. The somnambulist remained in precisely the same state, that is, *dead to all appearance;* and I could not but anticipate that the most serious evils would result from her continuing in this condition. She herself had said, whilst somnambulised, that, *if left in lethargy for more than ten minutes, she was in danger of permanent paralysis of the extremities, and of at once losing her life.* I shall not try to paint the *anguish* (the expression is not exaggerated) which I now endured. At length, by great attention, and after using *efforts of every kind,* I succeeded in restoring the patient to the state of somnambulism, *without her suffering any other evil results than a violent pain in the head, and a sort of ' étourdissement,' for which she ordered herself a strong dose of magnetism, which was administered to her.* She assigned the same cause for her fit which the other somnambulist had done. Mad. D., she said, had magnetised her at a distance, in order to make her fall into paralysis; but her action had not been sufficiently powerful to cause it to cease. The next morning I learnt, though without astonishment, from Madame D , that she had never thought of magnetising her patient whilst absent, and *that therefore I had been indebted to the imagination of the latter for the scene which had frightened me so much. She had thought that this was an experiment,* and that the persons left in the room were there to divert her attention, and render it more conclusive. In giving this case in detail, I have had for my object, not only to prove the power of the imagination, *but to familiarize a little my readers with the singular scenes which may daily occur in magnetic treatments accompanied by somnambulism."* (*Bertrand,* p. 270.)

One of the facts most conclusive in favour of magnetism at a distance, and of the existence of a magnetic fluid, is the following experiment tried on Mlle. Samson, at the Hôtel Dieu : "a person who had for fifteen days previously been the subject of *' une multitude d'expériences,'* of which a great number had been instituted, for the purpose of exercising some influence over her, unknown to herself." M. Husson asks Mlle.

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* It is very common to see somnambulists experience all the morbid symptoms of the persons to whom their attention is directed, *especially if they know what their symptoms are.—Bertrand.*

Samson if she is asleep? The latter answers, "that she is not sleepy, and that she never goes to sleep so early." She coughs, and M. Husson retires to a place where she could not see him, but where he also could not see anything that took place. The magnetiser begins to direct his action (*diriger son action*) at seven o'clock; at eight minutes past seven, the patient says aloud, talking to herself, "It's astonishing how my eyes hurt me; I can't keep them open." A minute afterwards she was asleep.* Bertrand was present, with several other orthodox somnambulisers, at this conclusive experiment, and with them authenticates the "fact," which occupies a prominent place in M. Husson's report; but, notwithstanding the deference he owes to the general opinion of his brethren, he feels compelled to observe, that Husson's question was calculated to make the patient suspect that she was about to be the subject of an experiment; and that her readiness in stating that she could not be sleepy, and her talking aloud to herself, show that she *did* suspect it.† All this is quite plain; and we very much fear that the magnetisers must soon acknowledge, strongly as they at present insist on its impossibility, that their vaunted phenomena, instead of having a real and sensible fluid for their instrument, are indeed *ex nihilo nihil*,—"distempers of the brain, begotten by a sickly fancy." If we have a magnetic fluid continually floating throughout our frames, and streaming from us on frequent occasions, the world surely would not have remained insensible to its operations for six thousand years. If there were, indeed, such "music in this little organ;" if man were, in very truth, "easier to be played on than a pipe;" we may be certain that the discovery would not so long have been deferred. The vulgar would have made it, ere the scientific could have dreamt of it; and our common life—not the hall of the somnambuliser—would be the field on which to contemplate its results.‡

If we allow that there is "an emanation of a peculiar agent," without which Dupotet confesses that magnetism is an absurdity, we are bound to enquire how far its operation extends; or, in other words, how far the animal magnet will carry. Somnambulisers in France and England have more exercised themselves in propelling their fluid through doors and brick walls than in projecting it to any distance. Not so in Germany, where the practised Jäger, brushing away the dew at early dawn,—ardent and yet an artist in pursuit,—afraid to shatter his som-

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* Expériences de l'Hôtel Dieu, quoted by Bertrand, p. 263.

† We may here remark, that Bertrand is praised by Husson, and that he delivered public courses of lectures on Somnambulism in 1819, 1820, and 1821. Dupotet states that the objections of Bertrand to the value of the experiment on Samson were practically refuted; but we find no allusion to this in Bertrand, who is since dead.

‡ In Germany, however, where philosophy boldly anticipates all practical objections, our common life is beginning to be made sensible of the debt it owes to magnetism. Stahel, of Wurzburg, has lately published three works (which we have not yet seen) of Professor Hensler; one of which is "On the Influence of Animal Magnetism on the Health and Longevity of Man *in social life, and especially in the state of Marriage;*" another is entitled "Effects of Animal Magnetism on Man and Nature, and on its importance in a medical, juridical, philosophical, religious, and historical point of view, and in respect to *social community;*" the third is "On the *different Kinds* of Animal Magnetism, and on their *different Effects,* &c." The work on Magnetism and Marriage, the publisher promises himself, in his advertisement, will produce a great sensation in the public.

nambulist by too close a shot, brings her tumbling down at the distance
of six good English miles. Though each to the other invisible, and each
separated from the other by many a line of undulating hills, he aims at
her* "between the eyes and breast," and she falls as perpendicularly as
the racoon descends when invoked to do so by a Kentucky rifle. Nadler†
shot at a woman at the distance of eighteen miles, and hit her precisely
at the moment‡ at which he fired: no sooner was his will at the trigger
than down she came. This patient begged her magnetiser not to try
such experiments with her, as otherwise he might somnambulise her *when
she was in a very inconvenient situation.* His love of science, however,
was not to be damped by such scruples; and so he persisted, and was
always as successful as at first: probably he anticipated that, were her
fears realized, the *science* might be enriched with some very new and
singular "facts." A married woman, whose magnificent "*soirées*" are
described, and whose case is given at great length in Wolfart's Annals,§
could not hear her child cry, which was by the side of her, but could
feel her magnetiser whenever he chose to make her, although he had left
Berlin definitively, and gone (we presume) to Mecklenburg, his native
country, there to remain. This lady was accustomed to choose her
magnetiser out of the crowd of young medical men who came to visit her,
and, whilst she was under treatment by one, she indicated who was to be
his successor, *before she ever saw him.* Wolfart was her magnetiser in
ordinary, and solemnized her successive unions with his scholars. The
evening before Dr. Barez, the Mecklenburgh physician, ran away from
her, (but not, as we have seen, with the intention of ceasing all commu-
nication with her,) she made an offer to a certain Dr. Oppert, to whom
she had never spoken, and whose own literal account of the courtship
is as follows: "It was merely on account of my having, when visiting, one
evening, the patients of Professor Wolfart, several times directed my
attention to her, *that I seem to have come into contact with her.*" In
making him the offer, she was pleased to express herself to the effect
"that she should be useful to him in assisting him to an improved 're-
cognition' of magnetic operations." The reason she assigned for not
remaining in magnetic widowhood was, that she did not like solitary
somnambulism; she had an objection "to sleep" alone. Her offer was
accepted, and the wedding duly solemnized. We copy the bridegroom's
account of it: "On the 25th of March, at ten o'clock in the morning, I
was introduced to her (for the first time) by Professor Wolfart. He
magnetised her simply: she fell asleep, as usual, and then rose to the
state of '*clairvoyance.*' Whilst she was in this, I was first brought *en
rapport* with her, and the professor left us after a few trifling remarks."
Now follows an account of the bridal dalliance. The first question

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* "In a solitary place, at five minutes after five, I began to perform the process men-
tally; it lasted twenty minutes;—I took my course from her eyes to her breast. On
arriving at her house, I heard that shortly after five she had fallen, complaining of
pains about her eyes, had been convulsed slightly, and had shortly *waked* into a mag-
netic sleep."— *Weinholt* quoted in the ΑΣΚΛΗΠΙΕΙΟΝ, p. 890.

† ΑΣΚ. p. 390.

‡ "Ganz genau in derselben Zeit." He had regulated his watch by her clock, for
the purpose of ascertaining the rapidity with which he could reach her, and fired, we
presume, watch in hand.

§ Vol. ii. part ii. p. 88.

which Dr. O. put to her was, "How do you do?" which were also, be it
remembered, the first words he ever addressed to her. She answered,
"Very well, thank you; only my eyes hurt me." He then practised
some manipulations, and enquired "whether he relieved her." "Oh!
yes," she said, "you do now." "Do you remember the medicine you
ordered for yourself on Friday?" "Oh! yes; the *pulmonaria.*" "What
did you prescribe for yourself yesterday?" "Lay your hand on my head,
and I'll tell you." The doctor did as he was told, and she answered "*Le-
ontodon taraxacum.* But that is not the right; it only seemed to me so.
This evening I shall be able to tell the professor what the other plants are
—there are three more. He must rub my organ of place and my organ of
colour." In such a frivolous and foolish tone as this is the conversation
continued through several pages.

Having presented our readers with a tolerably complete view of the
various theories of the magnetic agent, we next turn our attention to its
pretended effects on the human system, adopting the descriptions and
details of magnetisers themselves; and on the very threshold of this
subject we encounter an important contradiction, which is, that Mesmer
magnetised for years without ever inducing somnambulism, whilst his
present followers mesmerise without ever scarcely producing anything
else; though none of them has dared to assert that their process differs
essentially from that of the founder of their sect. Should they now,
however, hazard this explanation, we have only to appeal for its utter
refutation to Dr. Andresse, of Berlin, who, though he practises precisely
according to the modern formula, assures us that, of a great number of
patients whom he has treated magnetically, he has never thrown one
into somnambulism.* The school of Wolfart regards this phenomenon
as an insignificant accident in the course of Mesmerian treatment:
nay, the professor goes so far as expressly to declare *that it does not
belong to magnetism, and that the latter presents the means of combat-
ing and avoiding it.*† He holds that it cannot occur in healthy subjects,
and that the liability to it arises from disease of some of the viscera.
Mesmer's anathema against it we have already had occasion to mention.
The fact is, the woman magnetised is more or less wittingly the child of
her own fitful fancy,—γυνη γαρ ουδεν οιδε πλην ο βουλεται;—her fancy is
moulded to the will of her magnetiser, and whatever symptoms the latter
chooses to summon forth are sure to come, whether they be somnam-
bulic, paralytic, or critical. If he could view the cloud of facts which
in our day threaten to obscure the sun of reason, the Greek philosopher
would only repeat his old exclamation, Ως εις' απιςον η γυναικειη φυσις.
Wolfart states that magnetism may cure a patient, without producing
upon her any sensible effects; but that this is not frequently the case.
He divides the phenomena generally induced by Mesmerian manipula-
tions into five classes, viz. 1. *Sensations agreeable, or the contrary:* the
former where the disease yields at once; the latter where it can only be
subdued by a "crisis." 2. *Alteration of temperature.* 3. *Convulsions.*
4. *Secretions and excretions of all kinds.* 5. *Changes of tone in the vi-*

* Wolfart's Annals, vol. i. part i. p. 168.
† For this startling assertion of the Berlin professor, see his Annals, vol. v. part ii.
p. 187.

tality of the senses and of the brain, amongst which somnambulism may sometimes occur.* This system, it will be instantly perceived, is identical with that of Mesmer: with respect, therefore, to the reality and value of the above effects, we may refer the reader to the Report of Bailly, in which it is distinctly proved, as most of the somnambulisers of the present day allow, that they have their origin solely in the imagination, to which all kinds of stimulants were administered, both at Paris and Berlin.

Magnetic somnambulism is the great modern phase of Mesmerism, and respecting its production we find the usual mass of contradictory evidence. Puysegur, its inventor, used to produce it, amongst other simple methods, by merely wishing to produce it; Barberin made his patients somnambulic by praying; Faria, by shouting; and the plan at present in vogue is "pawing." Respecting the nature of this state, the opinions of the learned are equally divided. Puysegur affirms that it exalts the intellect to a superhuman pitch. He derives, he tells us, from a somnambulic peasant, who is more than half idiotic when awake, both knowledge and judgment. He denominates him his intelligence, and then describes him as a being for whom it is impossible to find a name. "When he is in a *crisis,*" he continues, " I know no one more profound, more prudent, and more *clairvoyant* than he is." Health M. de Puysegur dispensed as liberally and as easily as did M. de Lauterbourg at Hammersmith terrace, five years afterwards. " I have only one regret," says he, "and it is that I cannot touch all who come." Unfortunately, the ideas and statements of this enthusiast are utterly at variance with the theories and observations of contemporary and subsequent German philosophers. Gmelin, who somnambulised at Heilbronn at the very time that Puysegur was hard at work at Busancy, sending the whole country to sleep, tells us that the intellect escaped its operation, and that the revelations made by the women he "manipulated" were of such a nature that he pitied equally those who made them and those who staid to listen to them. Moreover, Kieser, and the other more systematic and philosophic writers who see in somnambulism a prominent phase of ganglionic life, hold that the somnambulist necessarily descends in the scale of being, and assert that she is incapable of even *exercising* her intellect. They make of her one huge organ of perception, unable to perform a reasoning process; holding that her brain is paralyzed, and her whole vitality absorbed by the ganglionic system. They turn man into a mere animal by the very process which Puysegur, Redern, and Dupotet adopt to make him into a god. Where their hands keep in abeyance the higher attributes of humanity, the " paws" of Sennevoy "lead us to entertain the spirit of a philosophy which is of the most cheering description, annihilating all those dark attributes of materialism which have so long thrown a gloom over the paths of science."† What Wolfart considers a disease, Gmelin a sensual orgasm, and Bertrand a fit of idiotic ecstacy, the Baron recommends us as the means of moral and physical regeneration.

The descriptions of the phenomena observed in the somnambulic state

* Annals, vol. iv. part ii. p. 22.   † Dupotet, p. 345.

are as various as the characters of their authors: we shall cite here that of M. Husson, which has the merit of being simple and succinct.

" The patient who falls into somnambulism acquires a prodigious extension of the faculty of sensation. Several of his external organs, generally those of sight and of hearing, become dull, and all their functions are performed internally. The somnambulist uses neither eyes nor ears, and still he sees and hears better than if he were awake. He only sees and hears those with whom he is *en rapport*. He only sees that on which he gazes, and generally he only looks at objects to which his attention is directed. He is subservient to the will of his magnetiser in respect to everything which is not prejudicial to him, and which does not run counter to his ideas of justice and truth. He feels the will of his magnetiser. He sees, or rather he feels, the interior of his own body and of that of others; but he only remarks, for the most part, those parts which are not in the natural state, and which disturb the general harmony. He perceives the magnetic fluid. He recollects things which he had forgotten when awake. He has '*previsions*' and '*presensations*,' which may be often erroneous, and which are limited in their extent. He talks with surprising fluency. He is not exempt from vanity. He improves, of himself, during a certain time, if he is managed properly; he goes astray, if badly directed. When he awakes, he has not the slightest recollection of the ideas and sensations he has had during the state of somnambulism."*

Puysegur speaks thus of his somnambulic patient:

" Man in the magnetic state is to be considered as the most interesting being in existence. With regard to his magnetiser, it is through his unbounded confidence in you that you have been enabled to bring him completely under your control. It is, therefore, for no other purpose but that of benefiting him that you have any right to exert your power. Attempting to deceive him or abuse his confidence, while in this state, is to commit a dishonest action, having a tendency contrary to his benefit; whence it follows that a contrary result is produced to that originally contemplated." (*Dupotet*, p. 144.)

A Mr. Wright, magnetised by Dupotet, says that "the word *fascination* aptly describes the influence which the magnetiser exerts. With me it is not an intellectual fascination, but only physical and moral."† A patient (one of Dupotet's, we presume,) her life being in the hands of her somnambuliser, petitioned him to *murder* her. " Why do you call me back to life?" said she, in her magnetic exaltation; " if you would only go away, this body which oppresses me would grow cold, and my soul would no longer be here on your return. I should then be perfectly happy."‡ Dupotet thus comments on this interesting case: " All hold nearly the same language, and suggest the idea of the soul being partially disencumbered of the coils of its mortality." This, as we shall afterwards find, is almost precisely the view of Mr. Mayo. Bertrand states that " moral inertia" constitutes the most remarkable psychological phenomenon of somnambulism;§ that it explains the want of caution with which uneducated somnambulists answer all the questions which are put to them; and that it is liable to be abused in many cases.‖ Ziermann dwells on the danger which the somnambulic patient incurs when the magnetiser quits her. " His absence," he says, "disturbs her, and causes her anxiety, convulsions, spasms, and fainting fits; all which symptoms are exasperated to the highest pitch if any other person than

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* Quoted by Bertrand, p. 292.
† Dupotet, p. 56.   ‡ Ibid. p. 166.
§ Bertrand, p. 292.   ‖ Ibid. p. 426.

her magnetiser attempt to offer her assistance; and even he cannot often allay them without great trouble and exertion. Her spirit frequently seems to be blended (*wie verschmolzen*) with his; and with him, consequently, her soul appears to depart and return." He advises his readers, unless they have plenty of time to spare, to enter into no very intimate "*rapport*" with a female patient; at any rate, into none "which is more intimate than natural;" or they may have great difficulty in getting out of it.* In another place he compares his somnambulists to his children, and gives rules for training them: some, he says, require the curb, some the spur.† Many, he continues, can frequently see nothing unless the magnetiser concentrate and direct their attention. We must go very rationally and orderly to work, he adds, or we shall turn out cases of somnambulism which will be a disgrace to ourselves and a scandal to the *science*. When the magnetic treatment has been delayed beyond the accustomed time, the most dangerous results, according to this author, may be expected to occur, especially in excitable cases. "Restlessness, care, and anxiety then trouble the patient; he misses the most important part of his life; he breathes with difficulty and embarrassment; he trembles, staggers, and faints. His face is as pale as death. The vital functions are arrested; the muscles relaxed; the blood is hardly felt to move in the veins; and the extremities grow cold. But, as if dispersed by the wand of the magician, all these symptoms fly at the approach of the magnetiser, who has but to touch that which was but just now to all appearance a corpse, and it starts into vigorous life."‡

Individual cases of a very suspicious relation between man and woman are not at all rarely met with, even in the works of magnetists themselves. Their very phraseology is equivocal; they have a habit of talking of each other's somnambulists, as if they were their wives or mistresses. Most magnetisers, it would seem, are initiated into the secrets of their science by some one lady, with whom they get into a very intimate "*rapport*," who is known to all the world as their "crack" patient, and whose case furnishes the occasion of their magnetic *debut*. Kerner was converted to magnetism by the Prophetess of Prevorst, a Mrs. Hauffe, who spent the latter part of her life in his house. Wolfart served his apprenticeship to a lady of Berlin, suffering under *intumescentia uteri*, whose case fills whole numbers of the Ασκληπιειον. A magnetiser, mentioned by Dr. Andresse, of Berlin, was so closely *en rapport* with one of his patients, that she could scarcely be without him for an instant, ("sie konnte fast keinen Augenblick ohne ihn sein;") and this lasted for two years.§ Some magnetisers were introduced into the house of Prof. Flörke at Berlin, and one of them, a Mr. H., soon got possession of his daughter. Her parent (who is not at all afflicted, but very scientific,) thus describes the "fascination" of the latter: "She could bear nothing but what Mr. H. had magnetised. Even her most intimate friends she could not suffer to be near her, if they were not conducted to her by Mr. H., or brought *en rapport* with her by means of a magnetised flower which they held in their hands."‖ Two years before Madame de P., whose case is related in the second volume of Wolfart's Annals, saw the

* Wolfart's Annals, vol. v. part ii. p. 17.   † Ibid. p. 36.   ‡ Ibid. p. 41.
§ Ibid. vol. i. part i. p. 173.   ‖ Ibid. p. 215.

latter, she had a vision in which he stood bodily ("leibhaftig") before her, and magnetised her. When she was actually under his care at Berlin, the most affectionate and unreserved familiarity existed between them : she made him the confidant of all her domestic secrets; and, on leaving Berlin to join her husband, she prophesied to him *that she should very shortly become pregnant by the latter;* which prophecy was duly communicated to the husband by Wolfart, who shortly afterwards published a history of the affair in his own Journal. The verses written and the revelations made by this lady during her course of treatment are of the most incoherent description; but they are all communicated to the public as authentic and highly valuable "facts." She writes letters to her husband whilst somnambulised, which she dare not read when awake, which betray an intimate acquaintance with the locality of Cleve, where he is residing, although she has never been there, and in one of which she says, "Dein Instrument hat mich oft zu dir herüber gezaubert," ("Thine instrument has often magically transported me to thy side,") although she had no possible evident means of knowing that one of his neighbours had lately lent him a piano. The husband is particularly edified by all this; he regards his wife as a superhuman being, and Wolfart as a wonderful creature. She addresses Wolfart with the singular pronoun "thou." One of her daughters, she tells him, has suddenly been seized with convulsions, and to cure her she goes on to say, " I thought on my friend, who is so kind to every one, and with thy will and thy sympathy, and knowing what thinking on thee did for me in the hour of danger, I breathed into her hands and magnetised her, as thou didst me when I was asleep. I feel myself for ever allied to thee, ('auf immer Dir verwandt,') but thy power and dignity I am too weak ever to aspire to.' She then gives him particular cautions respecting his health, especially touching every feeling *in the left side of his breast;* recommends him magnetised herbs, and finishes with a burst of sublimity which is too unintelligible for translation. Wolfart, on the other hand, furnishes her with a regular supply of magnetised wool, plants, bottles, &c.; and also communicates with her in the distance, after the manner of Nadler and Wienholt; and by these means was always able soon to harmonize her system, however violently disturbed. On the 29th of March, 1819, Monsieur de P. thus writes to Wolfart: " On the 26th of this month, my wife was prematurely brought to bed of twins. She is as well as can be expected, and is much indebted to you for a magnetised bottle which you gave her two years and a half ago, which magnetised her after her confinement, and cured her of a terrible attack of spasmodic colic."

Of such stories as the following we have heard abundance in Germany, related by members of families in which the circumstances are said to have occurred. One day, whilst at Berlin, Madame de P., in a somnambulic trance, announced that a letter would shortly arrive from her husband. Suddenly she exclaimed "The postman is now coming down Frederick street." Dr. Ebel, one of the magnetic staff, who was with her, instantly walked from her couch to the window, and saw the postman coming down the street towards the house, which was at the corner. Before he reached it, however, he turned to the left down Behren street, and in the same moment the somnambulist said, in a tone of vexation,

" Ah! he's going round the corner: he's gone; but he'll be here directly."
He came as she had foretold, and brought a letter from Cleve, 420
miles distant, which Dr. C. laid sealed upon the pit of her stomach, and
which she then perused, detailing its contents to him.   On waking
shortly afterwards, she did not know that a letter had arrived. Amongst
her somnambulic rhapsodies we find the following words: " How limited
are the contemplations even of the most *clairvoyant!*   Why and where-
fore?   Ask me not; for, by the eternal Godhead, I *dare* not say it."   It
is pretended that a mysterious change was operated in the whole charac-
ter of this woman by somnambulism; that it invested her with a truly
religious solemnity, and filled her with a spiritual peace which never
afterwards deserted her; that, in short, " it stamped, as it were, another
seal on her personality: (" Drückte gleichsam ein andres Siegel ihrer
Persönlichkeit auf.")

The absolute immorality of somnambulising, and the abuses to which
the practice is liable, are never expressly denied by French writers on
the subject, who, if they can establish what they are pleased to call a
"fact," trouble themselves very little about its moral bearings.   In
Germany, however, it has occurred to some of the more conscientious
friends of the *science*, that objections on the score of common decency
might be made to some of its practical results, and that they have ac-
cordingly undertaken to meet them.   There is nothing like assuming a
bold front in a bad cause; and we find this verified in Kluge's eulogy
on magnetism, which he makes when called upon for its apology.   To
have remained on the defensive in such a weak position would have been
fatal policy; and so he at once anticipates all attacks and objections, by
gravely assuring us that, if a woman was not virtuous before, she will
become so when somnambulised.   He divides the magnetic state into six
stages, in which, the more advanced the patient is, the more moral does
she grow.   In the sixth stage, says he, the patient is capable of no im-
purity; and, were he even a degraded being, he attains here to a sense
of virtue. (" Im sechsten Grade ist mann keiner Unlauterkeit fähig, und
selbst der schon Gesunkene erlangt in ihm zum Tugendgefühl." p. 238.)
These interesting assertions are duly confirmed by experiments.   A pa-
tient, whom her magnetiser once attempted to kiss whilst in a trance,
went, we are informed, into convulsions, and soon afterwards died.
Another, we are told, would not allow her physician to kiss her hand
when asleep, though she would when awake.   It would seem that all
Kluge's female patients agreed to be virtuous for no other reason than
that of preserving intact the reputation of the *science*, of which they were
evidently much more chary than of their own.   This author gives an
account of a woman who, from the mere consciousness that a man was
regarding her with lustful eyes, was afflicted with the most painful symp-
toms, which were only relieved by his departure.   Though these patients
were morally impregnable, their bodies were liable to be invaded by all
the morbid symptoms of any person with whom they were placed in con-
tact: two afflicted with different complaints have been known to change
them for a time, and then each to return her own to the other!   They
had an innocent predilection,* it is true, for their own somnambuliser,

* " Eine unschuldige Zuneigung."

and for all that was his; they were exquisitely sensible to all his vari-
ations of temper and conduct; but they would not tolerate even the
slightest liberty.*

The conclusions to which any unbiassed person would come respect-
ing animal magnetism, taking all the details of its professors as authen-
tic, are that, though furnishing means for every kind of immorality, it
still promotes every virtue; that it performs all imaginable miracles, and
cures all existing diseases, and at the same time creates a few more.

There are two classes of marvellous phenomena presented by somnam-
bulism, one of which has reference to this world only, and the other to
both this and the next. We shall treat of the former first. It is not the
object of this article to undertake a formal criticism of these phenomena:
we prefer writing the history of magnetism, and relying for our informa-
tion on the unexceptionable authority of its ardent advocates, to appeal-
ing to its constituted adversaries and rancorous foes. The Reports of the
French Commissions have already been often placed before the English
public. With respect, however, to the value of the evidence on which
the reality of such an accomplishment as that of seeing with the eyes
bandaged is based, we will just observe, that arguments drawn from the
respectability of the persons who attest it we cannot admit; inasmuch as
we shall find that persons just as respectable have formally attested the
greatest absurdities that were ever published. It is one of the peculiari-
ties of animal magnetism that its grossest outrages on common sense will
be found to be those of its facts which are best authenticated. We may
observe that Bertrand, who somnambulised for years, admits that he
never witnessed a fact which convinced him of the existence of this phe-
nomenon. Finally, we would advert to the evidence furnished by the
examination of M. Berna's somnambulist by Bouillaud, Roux, &c. in
1837.† Here we find a girl who has reason to suppose that a plain card,
which was held up to her when her eyes were bandaged, was a playing
card, stating that it was the knave of clubs. We hold this failure to be
much more conclusive and instructive than any of the attested facts on
which magnetism is built: if she had merely expressed her inability to state
what the card was, we grant that then the experiment would be about as
valueless as most of the positive evidence in favour of magnetism; but,
as it was, she at once betrayed her own character, that of her magnetiser,
and the nature of the whole business: either she had an impression that
the card was the knave of clubs, and so was deceived herself, or she
merely sought to deceive others, and was, in that case, a deliberate
impostor.

Kluge states that such is the sympathy between the magnetiser and his
somnambulist, that he has known the latter to vomit and be purged in
consequence of medicine which the former had taken. He once put his
watch to the ear of one of his somnambulists, and she could not hear it
tick; but she heard it in her left ear as soon as he put it to his right.
Whenever he put pepper on his tongue or drank wine, she tasted these
things distinctly on her palate. Indeed, he warrants the conclusion that
his somnambulists were extensions of his own being, appendages to his

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* Yet the man who asserts this adds, "Auch Gemüthsaffekte des Magnetiseurs
können während der magnetische Behandlung auf die Kranke übergehen." (p. 202.)
   † See Lee on Animal Magnetism, &c. p. 37.

own body, which, though he did not feel them, were as sensible to his pains and pleasures as his other limbs; but which, of course, had he attempted to use them in a way they did not like, would have been instantly independent of him and inimical to him; though, had not the contrary been so positively asserted, we should have thought that passion would have been as communicable under such sympathetic circumstances, and after such a thorough blending of the physical nature, as the taste of wine. This writer treated a patient who had a tolerably exact knowledge ("eine ziemlich genaue Keuntniss") of the illness of her brother, who was at the distance from her of six hundred miles. This, however, does not equal an exploit of one of Wolfart's patients, who, on the 3d of August, 1811, at two o'clock in the afternoon, plainly saw her brother, who was staying on account of his health with a clergyman in the country, at the distance of some hundreds of miles. He was in a small field before the house at the time, walking *in the sun* with the clergyman; and they were both employed in looking for particular plants. She describes the dress of the latter, remarking that his coat was grey, and that he had on a very singularly shaped hat. Now, this 3d of August was an extremely hot day; and Wolfart was inclined to doubt the reality of the facts, from the circumstance *that the botanists did not confine themselves to the shade.* A letter was accordingly dispatched on the subject to the clergyman, who, in his answer, gave a full and particular account of the manner in which he and the brother of the somnambulist had been employed on the day in question, in the field before his house, in searching for the seed of the better sort of grasses, in order to improve his pasture; that, in order to pluck this seed just at the moment of maturity, they had been obliged to expose themselves to the heat of the sun at two o'clock in the day; that he had on a grey coat and a broad-brimmed hat, of which the brims slouched down, which he generally wore in rainy weather, but which he put on, on this occasion, to protect his face from the scorching heat. Whenever Wolfart directed the attention of this patient to her internal organs, she could see and describe them perfectly: this she did on the 4th of August, 1811, in the presence of Professor Grappengieser. She could hear Prof. Grappengieser whisper, but only when he was in contact with *her* professor. In the following month this woman saved Wolfart much anxiety and considerable expense in postage: his mother, who was many miles from Berlin, had a dangerous illness, and she described it to him day by day. She had never seen his mother, nor been where the latter resided; still she described her form, features, and whole appearance perfectly; and also the place she lived in. On the 7th of September she said, " I see her sitting in bed; her breathing is easier, but she lays her hand on her stomach as if she felt pain there." It was afterwards found that her affection had been principally one of the stomach, for which relief could only be procured by the application of the hand externally. On a subsequent day she said, " She is lying on the same bed, and is employed about something. It seems to me that there are several people going about the room, but I cannot recognize them. I think there is one sitting near the window. She is not so ill as she was; she appears to me to be like a person who does not leave her bed *because* she is better." When the old lady does manage to part with her pillow, the somnambulist an-

nounces the circumstance, and sees her walking about the room, leaning on another person's arm. We could not here, without occupying the space of this whole article, give any idea of the complexity and confusion of experiments which were tried, and of results which were obtained, in the case of this woman, in the presence of most respectable persons, generally mentioned by name, but must refer the curious reader to the original account of it published in the Ασκληπιειον, p. 1393. Let not the reader imagine that such stories as these are found only in German works on animal magnetism: we find even worse in the " Introduction" to the science by the Baron de Sennevoy, who at this moment is practising amongst the English aristocracy. In this the author gravely relates the case of a lady, who "appeared to a friend of hers in a house at a distance, and *cured her of the toothach.* She affirmed that it was her spiritual being, which, conducted by the soul of her mother, rendered this visit."* Neither time nor space exists for the somnambulist: she can embrace within her being the whole progress of events, and expand to the remotest distance. She can describe the past and divine the future.

Dr. Mertins, a physician practising at Berlin, asked one of his somnambulists whether magnetism had been used in the most ancient times, before the birth of Christ, and particularly by the Egyptians? She answered, *after a pause,*

" In a wide and sandy plain, where the air is pure and salubrious, at some distance from a large town, I see a temple, where physicians *or priests* are healing the sick. These are the Egyptians. The temple is of wood, rests on four pillars, and is entered by a flight of stone steps. It fronts the east. . . . . Now I enter a magnificent hall, on the middle of the dome of which there is a half moon and numerous stars. There are no windows, but round openings covered with green cloth, to diminish the intensity of the light. . . . Round along the wall are eighteen beds for invalids, or rather for sleepers, whom I see lying in them. The bedsteads as well as the pillows are stuffed with herbs. The beds are placed two and two, their heads towards the centre of the hall; a little nearer which is a circle of nine polished, shining, hollow, iron pillars, about three inches in diameter and three feet high. Each pillar stands on a triangular pedestal, which is filled with herbs; but the pillar itself contains quicksilver. The pillars are connected by a chain, and another chain intersects the circle which they form: along the latter sit patients, grasping it with one hand, with their backs towards the pillars, and holding with the other hand a ball with a cross projecting from it, three inches in diameter, hollow, and filled with herbs;† it looks like marble, but of what it is composed I cannot say. I see physicians with polished hollow iron rods, filled also with herbs, touching with them the parts affected of the patients. Two priests walk towards each other from the end of the chain, performing the treatment; and all the physicians keep touching the chain with balls like those of the patients, and shaking it. All the persons whom I see are clothed in white garments, and the priests wear a girdle around the body, which is buckled with a half moon in front, and on which are the figures of nine stars. The treatment of the patients is a religious rite, is only performed in the evening, and is best undertaken by moonlight. On the eastern side of the dome is a large opening, through which the moon pours her light into the interior of the building. There is another opening, which the priests make use of for watching the motions of the stars; for it is necessary to the perfection of their medical practice that they should be good astronomers and astrologers. They all live in celibacy, and choose the eldest amongst them for their chief or king, whose brow is encircled by a crown, and who sways in his hand the ball and staff, (from which, probably, the form of the modern regal

* Dupotet, p. 248.
† An engraving of both the temple and the ball are given in the original.

sceptre is derived.) . . .   This temple lies near a large town, past which flows a river whose waters are of a reddish hue. At the present day," she added, " perhaps not a trace of this temple or city remains."

This somnambulist declared that, in the Vatican, there were many works on the ancient history and practice of magnetism; and one large book in particular, which she *saw*, and which a pious sage had translated from the hieroglyphics of the Egyptians into Greek.[*] Dr. Mertins hints to the Prussian government, that the magnetic establishment above described seemed to the somnambulist proper to be imitated on a large scale, wherever the state defrayed the expenses of such institutions.

Wolfart remarks, that the whole article of Mertins is valuable, and not the less so because we lack historical proofs of the accuracy of this visionary description, and as to whether also the Egyptians were acquainted with quicksilver. For church-service (*Tempel-dienst*), says he, the somnambulist has here presented us with a great magnetic formula, which is surprisingly correct in its " polaric relations," which must be regarded as of incalculable efficacy, and of which the construction would do honour to the most sagacious and experienced magnetic practitioner. It furnishes a model, he continues, for all magnetic establishments on a large scale.[†] Not only does the magnetist claim as his the method of instruction, but he points to his somnambulist as an infallible source of all knowledge, historical and psychological, physiological and therapeutical, and even religious. Reason is superannuated; all research but folly; and every science but the *one* a contemptible and paltry delusion.

We now, with mingled feelings of wonder, melancholy, and disgust, approach the last chapter of the history of this grand modern instance of Credulity and Delusion.

The " Prophetess of Prevorst" first claims our attention, of whom her physician, Justinus Kerner, has published two volumes of more than 300 pages each, full of mystic details of her character and performances; all approved by such men as Schubert, Eschenmeyer, and Görres, who were and still are professors at German universities.

" Long before she was brought to me," says Kerner, " the whole earth, with its atmosphere, and all that was in and on it, mankind not excluded, existed for her no longer. She required more than one magnetiser,—more than the love, the zeal, the judgment which any one man possesses; she required what no mortal can bestow, another heaven, another air, and other nourishment than this world affords. She belonged to a world of spirits ; she was half spirit herself; she belonged to the region beyond death, in which she already half existed. . . . . During the first years which she spent in the state which was not of this world, she might possibly have been withdrawn from it; but that was afterwards impossible. . . . . Still her residence here, at Weinsberg, (in Kerner's house, where she died,) was the most joy-

* The moon, this patient and her physician both state, had a particular influence upon her. " For seven years she was afflicted to madness by a nervous headach, of which she was at last cured by four months' magnetic treatment. When she experienced its attacks she went, at first driven by some instinctive compulsion, and afterwards voluntarily, to a mountain near her residence, on which she seated herself, and allowed the moon to shine upon her. She never did this without finding that it relieved her pains in the head."

† The article of Dr. Mertins' is the sixth in the first number of the second volume of Wolfart's Annals.

ful part of her spiritual life, and remains its brightest period, though many have sought to sully it with their poisonous spittle and ink. Her body clothed her spirit like a thin veil. She was small, of oriental features, and had the piercing eye of a prophet, the effect of whose glance was increased by her long and dark eyebrows and eyelashes. She was a flower of light, living on sunbeams."[*]

Eschenmeyer said of her, " Without apparent derangement of the vital functions, her life seemed to be only the glimmer of an expiring light. She was, as Kerner has admirably expressed it, a being who was continually dying, and whose life would have long since flown, had it not been retained by magnetic power. Her spirit seemed to be often separated from her soul, and the former frequently to dwell in other regions, whilst the latter was still bound to her body." (p. 60.) She said that she drew from the air " a particular nourishment, a living and vivifying principle." " Doubtless," adds Kerner, " the air which is allied to the sunbeams is the bearer of a stream of life from on high. She maintained, also, that there was a matter in the air, of which spirits availed themselves to render themselves visible and audible, which was prejudicial to her, but which was more observable on a fine than on a cloudy day." (p. 101.) " The spirit of all things, of which we in our ordinary condition have no perception, was perceptible to her, and operated upon her; more particularly the spirit of metals, herbs, men, and animals. All imponderable matters, even the different colours of the rays of light, produced upon her particular effects. To her the electrical fluid was visible and palpable." (p. 54.) " She perceived a weight distinct from all matter; she recognized a moral weight." (p. 79.) All kinds of substances, animal, mineral, vegetable, and fossil, were placed in contact with her, and the feelings which they produced duly recorded. The details of these experiments occupy thirty pages; they were repeated carefully, and varied in numerous ways. Whatever was given her to hold she took in her left hand, which she maintained was much more sensible than her right. Pressing it with her palm, she then directed her attention "to her left arm and side, then to the stomach, and thence generally to the lungs, brain, heart, &c., in order to discover what effect it produced. The smell of flint was agreeable to her. She tasted none of the stones, and still knew that fluor-spar was acid, and that muriate of barytes had a rough taste. Salt laid on her hand caused a flow of saliva; and copper, nausea and colic. Rock-crystal, placed on the pit of her stomach, produced rigidity of the whole body. 'Witherit' made her laugh, and fluor-spar always somnambulised her; though such different specimens of these fossils were used, that only a mineralogist could distinguish them as stones of the same species." (p. 74.) Grapes, of the thousand different sorts which are cultivated on the banks of the German rivers, were put into her hand, and all with different results. The feelings which they all excited in her corresponded exactly to the effects which followed the wines made from them : this is duly attested by Mr. Göritz, a *gourmet*, of Stuttgard. (p. 81.)

" The bone of an elk threw her into a sort of epileptic fit; the horn of a chamois cured her of spasms. The nipple of a mare produced a remarkable effect upon her brain : had she epilepsy, she said, it would be of great service to her. It figured

[*] Die Seherin von Prevorst, p. 59.

frequently in the prescriptions she ordered for herself.   Powdered, for instance, she had it rubbed into her spine, as a remedy for its weakness; she also used it to smell of when she was faint.   It might be introduced into the materia medica.   This animal substance seems to contain a quantity of ammonia, and has a very peculiar odour; in some trifling degree similar to that of castor.   I only find it mentioned in Paracelsus, who used it in an ointment for the plague."   .   .   .   " The tooth of a mammoth caused her a feeling of sluggishness, which was probably a consequence of the slothfulness and dulness natural to that animal.   .   .   .   A spider's web, rolled into a ball, produced a prickly feeling in the hands, and a restlessness in the whole body : might it not be of benefit in delirium tremens ?   Glow-worms threw her into a magnetic sleep." (p. 89 *et seq.*)

" Whilst the prophetess was at Weinsberg, the sun had only the following effect upon her: When she lay towards the occident, she menstruated continually; when towards the south, regularly.   When she was not regular, she had only to turn towards the west.   Once in sleep she described the cause of all this, but it was not recorded. The red ray of light rendered by degrees her whole body cataleptically rigid ; but she recovered by the contact of barytes.   A violet ray somnambulised her; which is remarkable, since it makes iron magnetic, and is said to promote the growth of plants. .   .   .   The moon seemed to have no influence on her, unless she gazed on it : then it called forth feelings of sadness, coldness, and shivering.   Looking at it caused her also to menstruate, but only, she maintained, through the sun, and only as long as she looked at it.   She said, ' If the moon acted upon me like the sun, I should be far worse than I am.' (p. 98.)   .   .   .   " Music somnambulised her : in order to make her cheerful, she was accustomed to request me to magnetise the water she drank by playing the jew's harp.   She used to say in sleep, ' Set the water in my glass in motion by seven strokes of that steel music.'   If she drank water thus magnetised, without even knowing that it had been so, she was generally constrained involuntarily to sing.   .   .   .   The sonorous vibrations of a glass after it has been struck, she seemed to hear much longer than other people.*   .   .   .   .   The eye of many men somnambulised her.   She frequently said, that there lies in the depths of the human eye a spiritual spark, which she would call the mirror of the soul; and through this the image of the external object, which falls on the retina upside down, is again turned round," &c. (p. 102 *et seq.*)

If she laid a magnetised rod on her right eye, and then gazed on any object, she saw it magnified.   On looking thus at the moon, she said, that, on its left side, its inhabitants were much employed in building, and were more happy than those of the right side.   She drew from the eyes and lips, and the fingers of other and stronger persons, sometimes without their feeling it, a *pabulum vitæ*.   Numbers of patients were sent to her by the most skilful physicians, who had tried their skill on them in vain; and she performed the most astonishing cures.   On the 5th of September, 1837, Kerner put in her hand a piece of ribbon, on which was written the name of a woman who was ill, but the nature of whose illness was unknown both to her and to him: the ribbon had been worn by the invalid, and its contact produced in the prophetess the malady of the latter,—" violent sickness, pain in the bone of the left foot, oppression of the chest, and a peculiar irritation of the uvula." (p. 167.)

She had a particular language and system of numbers and calculation, of which long descriptions, explanations, diagrams, and engravings are given.   These had a particular reference to different phases of her being, which she called her solar and vital circles, of which long interpretations are published by the celebrated Görres, professor at the university of

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* On magnetism by sound; Kerner quotes Mesmer, and the example of the prophet Elisha, (2 Kings, iii. 15.)

Munich, one of the most remarkable men in Germany, both as a political and religious character, and as a man of action. The phrase *bianachli*, which she only knew how to pronounce in her vital circle, and which she translated with great repugnance on her solar circle, means in Hebrew "I am in sighs." The following phrases we give as examples of her language: *Optini poga*, go to sleep; *o minio pachadastin*, I am asleep; *mi lo arato*, I rest; *posi anin cotta*, the ring is full.

The Prophetess of Prevorst saved her brother's life, by warning him that a man was about to attempt it. She said, "He who is planning my brother's murder is a person of twenty-six years of age, and he does not live in the same village as my brother. I see only a few houses in the place where he is;—you turn to the left to go to them. There he is in a house two stories high. But it is now enough; and I thank thee, my God, that I know that my brother is saved." Then she prayed in a low voice.

Spirits in vast numbers visited her; but she did not seek their acquaintance; they forced themselves upon her.

"I often see," she said, "many with whom I do not come into contact; then, again, others who come to me, with whom I speak, and who often spend months in my company.* I see them even when I am awake, and they often wake me out of my sleep. I hear and see other things at the same time; but I cannot turn my eyes from them, for I am, as it were, in magnetic *rapport* with them. They look like thin clouds; but are not transparent, though they at first seem so; still I never saw one which cast a shadow. Their form is like that which they had during life, only colourless and grey; their clothing is also similar to that which they wore when alive, but it is also colourless, as if made of cloud. The brighter and better spirits, however, have on a long garment, hanging in folds, with a girdle round the waist. The expression of their features is generally solemn and sad. Their eyes are bright, like a fire. None of them, that I ever saw, had hair on the head. They make noises, particularly to excite the attention of those who have not the gift of seeing them: these noises consist of sounds in the air, sometimes sudden and sharp, and producing a shock; sometimes musical; at others resembling the rustling of paper, the falling of sand, the rolling of a ball, &c. They can carry heavy substances, overturn tables, knock plates together in the rack, &c. The better spirits are brighter than the bad ones, and their voice is not so strong. Many, particularly the darker ones, when I uttered words of religious consolation, sucked them, as it were, in, and I saw them become brighter and lighter in consequence; but I was rendered weaker. Most of the spirits who come to me are in the lowest regions of the spiritual world, which are situated in our atmosphere: they were the grovelling ones of this world, or such as did not die in the Christian faith, or else such as in expiring clung to some earthly thought, which now weighs them down. In these inferior regions the spirits are still exposed to the temptations of the devil. I once asked a spirit whether children grew after death. The answer was 'Yes; the soul gradually expands its vest, until it is as large as it would have become on earth.' I cannot effect the salvation of these spirits; I am only their mediator; I pray ardently with them, and so lead them by degrees to the great Saviour of the world; but it costs an infinity of trouble before such a soul turns again to the Lord." (vol. ii. p. 10 *et seq.*)

Herr von Meyer, the author of "Pages from Prevorst" and "Pages for higher Truth," says, in the latter work, alluding to these spirits, "The soul (of the dead) is often far from being spiritual. On the con-

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* We may here premise, what will shortly fully appear, that there are a host of witnesses living, ready to attest the "facts" mentioned in this work; a host of persons ready to swear that they, too, saw or heard the ghosts.

trary, it is frequently poor in spirit, foolish, full of errors as to the means of bettering its condition; and, in its deeds and desires, is often as absurd and laughable as any madman." Eschenmeyer says, "The heavenly spirits doubtless are ideally beautiful; truth there assumes her snow-white robe, and virtue receives her crown; but with ghosts of earth, how different!—blear-eyed lust may stare through their hollow mask, vice becomes a monster, and crime shrouds itself in the black steam of hell. The wedding-garment of heaven is only sent to those who have been bidden to the marriage of the Lamb; and the night-dress of earth is left the sinful, who must stand without, and to whom the Lord says "I know you not."

On the 31st of December, 1825, whilst the prophetess was singing a psalm in the house of her father at Oberstenfeld,* a noise was suddenly heard, as if something heavy had fallen to the ground. Nothing was seen; but, when she went to bed, her lamp was observed and heard to flicker about, and all at once the cloudy form of an old knight stood before her. In her alarm, she called to the maid-servant, who was near her, to come and sleep in her bed: the latter attempted to bring with her some of her bedclothes, but these were taken from her and kept back by an invisible hand. The ghost then disappeared. The next night, as the clock struck twelve, when her brother was in her room, it again appeared, shook her bedstead, and said to her, "If thou wilt not go with me, I will throw thee out of the window." She answered, "In the name of Jesus, do it." He vanished, reappeared, and exclaimed, "I'll throw thee into the deep cellar." She answered, "In the name of Jesus, do it." He then vanished again; but returned again in a few minutes, and threatened to stab her. But she said, "That thou hast no power to do." He now once more melted away, and did not repeat his visit for three nights. When he again appeared, he said to her, "Thou must go with me, for I have hidden an inkstand. Under the sandbox is some writing and a few coins. This stand I must give thee—then I shall have rest." She said, "I cannot go with thee: this inkstand cannot render thee happy." In subsequent conversations she directed him to the word of God, and reminded him that there is only one Saviour, taught him to pray, and prayed for hours with him, kneeling by her side. He confessed to her that he had murdered his brother, and that he was a member of the Weiler family of Lichtenberg. On the seventh night this apparition told her that the hour of his liberation was near, and thanked her for having brought him to his Saviour. His whole figure was now much more friendly and bright. On a sudden appeared seven of his children, all white, shining, and joyful: they were grown up; they formed a circle round him, and sang in exquisite melody. The knight and the prophetess joined them, and the latter fell into a sleep, in which she continued singing for some time: when she awoke, she found the knight still by her side, who wanted to mark her hand in remembrance of him, and who would not quit her until the ghost of her grandmother stepped between them, and drove him off. (vol. ii. p. 80.)

Shortly afterwards the ghost of another murderer appeared to her:

* It was not till afterwards that she left her husband, a Mr. Hauffe, by whom she had children, to live with Kerner—and his wife.

this was a short, dark, wrinkled figure, who wore a cowl. He told her to treat him like a child, and instruct him in the rudiments of religion. He haunted the house, and amused himself by perplexing its inhabitants in every possible way, so that her father determined to leave it. All kinds of noises were heard, and in every direction; and, if any person ran to see what was the matter, they instantly broke out in other places. Sometimes the prophetess ran away from the spirit, and one day, in trying to escape him, she tumbled over the threshold. He sought to lift her up, but could not. Then she felt on her right arm a hand, and saw a white figure, which raised her from the ground.

She took a walk in the middle of the day once, with her parents, her brother, and a female friend, to Bottwar. As they were returning, and had reached the garden of the abbey at Oberstenfeld, the clock struck seven, and the ghost (who always chose this hour to appear at) instantly stood before her. She was compelled to run with it at an incredible rate, and her friends heard it as it dragged her along, flapping in the air and against the walls of the houses. She went with it into a deserted kitchen, and they there prayed together. One evening she walked to Gronau; and, as she was not back by seven, the ghost came to fetch her. She now flew rather than ran with it home; her feet did not touch the ground; it was impossible for any person to follow her. The ghost swept on before her, and now and then relaxed his pace, and breathed out the words " Pray for me! pray for me!" They went again to the kitchen, where he folded his hands, knelt, and prayed with her calmly. Every time, after praying, the spirit uttered some short sentence, of which, says Kerner, few unluckily have been preserved; they are as follows: " Now a sun rises within me!" or " Now the sun shines within me."

It is impossible to describe the solemnity and devout conviction with which the author of, and the contributors to, the work before us speak of such scenes as the foregoing. Its motto is, " I thank thee, Father of heaven and earth! that thou hast hidden those things from the wise and prudent, and revealed them unto babes." After relating one of the miraculous performances of the prophetess, Kerner exclaims, "Recognize here, O thoughtful reader, the power of spiritual sympathy, prayer, and childlike faith!" On this exclamation Eschenmeyer observes, " Ah! my friend, they will recognize it not; they have not even a distant idea of what spiritual sympathy is; they cannot feel what prayer or what childlike faith consists in." (vol. i. p. 179.) Kerner declares that he visited this patient at least three thousand times, and that she cannot have deceived him; (vol. ii. p. 34:) as to the assertion that she was cracked, he allows that she was " as cracked as Plato was." (vol. ii. p. 38.) Indeed, all her biographers and commentators are evidently deeply impressed with the belief that they are dealing with irrefragable and awful truths. They betray no personal feelings; their whole nature is subdued to the grandeur of the cause, whose furtherance, as they imagine, has been imposed upon them from on high. They are as much the slaves of the somnambulist as she is theirs. Kerner's anger is never roused except when she is attacked: of his own reputation he does not appear to have the slightest care. We know nothing that they can possibly gain by their labours; for they claim no merit to themselves, and their pursuits are certainly most unprofitable in every sense: they confess that they are

often in helpless ignorance until enlightened by their somnambulist.   Of the sincerity of all of them no doubt has ever been expressed in Germany; of their learning and standing in society we need not again remind our readers, though we may remark, in addition, that two of them, at any rate, Schubert and Görres, have a European reputation from their scientific and literary labours.   The work itself is written with a mystic fervour perfectly in accordance with the subject; it is very ill arranged, and interlarded with quotations from old chronicles, from Jacob Behmen, Paracelsus, Herr von Meyer's "Hades, or a Theory of the Science of Ghosts," the Philadelphia Journal of the Medical and Physical Sciences, the Times newspaper, and a thousand other sources; but the style is generally good, where not too mystical. The first volume is principally occupied with an account of the magnetic condition of the somnambulist; the second with a detailed history of her ghostly experience.   It is often, particularly in the psychico-theological parts, utterly unintelligible to any reader.   In some parts which we have not touched upon, we find accounts of contemporary wizards, of amulets, sympathetic powders, charms, conjurations: indeed, the work may be entitled "An Essay towards the Restoration of Witchcraft; with an account of it as a Science, and Directions for practising it as an Art."   It appears that the only alteration which this ancient profession undergoes at the hands of its revivers is that, instead of being heretical, it is now a most thoroughly Christian practice.   From the bright effect produced by the prophetess on the dark spirits, we find that it has also changed from a *black* into a *white* art.   That the former, however, in spite of her piety, would have been burnt alive in the middle ages, there cannot be the slightest doubt; for Kerner is at pains to assure us that she was so light that she could not, by any means short of a millstone, be kept under water.

The consummation of animal magnetism is, then, that the most illustrious somnambulist that ever lived was a witch, who departed this life on the 5th of August, 1829, and who now lies buried at Löwenstein, in the kingdom of Würtemberg.   There is nothing more instructive in the history of the prophetess than the fact that, no sooner was it rumoured that she was haunted, than ghosts began to appear throughout all the kingdom of Wurtemberg.

The history of her life at Weinsberg is nothing but a continuation of ghost-scenes.   She brought her whole stock of spirits with her, and kept most of them by her until her decease.   The business she transacted with each is described under the head of "Facts:" we have "First Fact at Weinsberg," a section twenty-six pages long; "Second Fact," nine pages; "Fourth," sixty pages, and so on.   We can give no idea of the scrupulous minuteness, multiplicity, and extravagance of the details: generally, a considerable number of other persons are in some way mixed up with the "facts."   The parson of the parish was waited on by the sprites who came to settle at Weinsberg with her; and he has duly attested this, after giving manifold details in a formal declaration, signed "Weinsberg, June 5th, 1827. C. W. Hermann, clergyman." (vol. ii. p. 190.) This reverend gentleman put questions to some of the visitants of the prophetess, as to what religion they were of; as to whether they knew the mother of our Lord; as to whether the Virgin Mary

stood in a more intimate relation to her exalted Son than any other
happy Spirit, &c.?   One of the answers he obtained was, "I know the
mother of our Lord somewhat better than thou dost." (vol. ii. p. 190.)
The "Fifth Fact" relates to an eccentric ghost, who came drest in a
Tyrolese hat and spurs, and who one day, in the presence of Kerner and
her sister, pulled off her boots, and carried them to the window; the next
night he called again, bringing an ugly old female spirit with him; and,
as soon as they entered the room, they put out the light. (vol. ii. p. 213.)
"I clearly understand," says Kerner, "that ghosts are not seen by the
eye, but by magnetic waking of the inner man."   The "Eleventh Fact"
is a declaration signed W. F. Pfleiderer, Heilbronn, October 20th, 1828;
and is an account of how, when he visited the prophetess, he was hugged
by the ghost of his schoolmaster, who happened to be staying with her at
the time. (vol. ii. p. 264.)   Of one, at any rate, of her ghostly visiters
a lithograph has been published : this was a woman in an ancient cos-
tume, with a human heart in her hand : she herself made a drawing of
her. (p. 275.)   In February, 1829, the prophetess was consulted by "a
robust, florid, lively woman," Mrs. Herlinger, whose husband was land-
lord of the *Eagle* at Grossgartach, near Heilbronn, and who was troubled
by the importunities of a ghost without a head.   Kerner reflected much
as to who this individual, whose postures and proceedings were some-
times very indecorous, could possibly be, but did not succeed in settling
the point to his satisfaction.   The prophetess was true to magnetism to
the last, and even longer; for, after she had been dead for some time,
and her cheeks had become cold and stiff, her mother made three mag-
netic passes over her face, and she again opened her eyes and moved her
lips.

The work terminates with some poetry by Kerner to her memory.
The last page but one contains the results of a post-mortem examination
of her body by Dr. Off, of Löwenstein, who never saw a more "beautifully
formed" brain than hers, nor a healthier one.   Preceding the details of
her death is a letter from a clergyman, seventy years old, Mr. Seeger, of
Altburg, congratulating Kerner on the new evidence of the immortality
of the soul, and of the power of Christianity, which the prophetess has
afforded.   "I stand," he says, "on the threshold of eternity, and
welcome every means of confirming my faith and hope."

We find in Wolfart's Annals (vol. v. part i. p. 74,) an account of a
woman whose performances eclipse those of even the prophetess.

"Her somnambulic sleep commenced with the apparition of an evil spirit; then a
good one overshadowed her, with whom she appeared to converse, and who took her
with him through the sun and moon into the mansions of eternity. Then he appeared
to her at an immense distance. Her physician, and those who saw her during her
converse with this spirit, describe her features as being like those of one transfigured,
whom no pencil could draw."

"Die Fingerzeige Gottes," one of the works quoted at the head of this
article, was published, in 1838, by Brockhaus of Leipsic: it is the
work of a lady, Madame de S., who, whilst under treatment by a phy-
sician, somnambulised her maid-servant, and by means of the latter
conversed with the Almighty. The book consists exclusively of their
dialogues, which are set down in the most ordinary phraseology, are on
the most trifling and absurd topics, and are held, indeed, in every re-

spect, in the most familiar and every-day tone. The following are specimens:

"*Question of Madame de S.* Shall I soon be ripe enough for immediate *clairvoyance?*

"*Answer of the girl.* He says, 'Not directly. Thou shouldst not write and think so much. Thou shouldst eat more nourishing food and plenty of raw eggs.'" (p. 22.)

"*Quest.* Tell him how I have enjoyed to-day, out of my window, the beauties of his works.

"*Ans.* Nature is everywhere beautiful." (p. 30.)

"*Mad. de S.* I cannot conceive, Lina, (the girl's name,) how it is that the Creator, Preserver, and Ruler, our dear Father, is not everywhere felt and adored.

"*Lina.* He says, in his goodness, 'I thank thee for that.'

"*Mad. de S.* Oh, God! Lina, tell him quickly that his love for me is all the gratitude I require." (p. 48.)

"*Mad. de S.* Is there a devil?

"*Lina.* There is no devil and no hell." (p. 49.)

"*Mad. de S.* I am afraid I speak, without thinking of it, too familiarly to him, as if I were talking to my mother.

"*Lina.* 'Am I not also thy Father?'

"*Mad. de S.* Tell him not to think too highly of me; not to make me too confident.

"*Lina.* He says, 'I will not lead thee astray.'" (p. 51.)

"*Mad. de S.* Could we illuminate our room every evening?

"*Lina.* 'My child may amuse herself in this way whenever she pleases.'

"*Mad. de S.* Yes; but thy child is not rich enough to do it.

"*Lina.* 'Child! child! Thou sayest that thou art not rich, and thou hast, whilst still on earth, half won the kingdom of heaven.'" (p. 117.)

"*Mad. de S.* Art thou sure it is not an angel who speaks to us? Is it the Father?

"*Lina.* He says, he is sure it is he himself." (p. 128.)

We have left ourselves little room to treat of the cures performed by animal magnetism. The most universal medicines do not pretend to be of avail in bringing man into the world, or restoring him to it when dead; they do not boast of being especially efficacious in arresting the progress of disorganization; they are not advertised as a remedy in the acutest forms of enteritis, in phlegmasia dolens, in pestiferous carbuncle, and in hydrophobia; but all these claims are put boldly forth by animal magnetists.* According to this sect, all diagnosis is superfluous, pathology is an absurdity, and therapeutics what every man has at his fingers' ends.

It is with reluctance that we turn to the English page of this strange eventful history. The censure which we have not wantonly bestowed even on remote offenders, cannot be dealt without pain on those nearer to ourselves, and whose estimable characters and actual services to science plead in extenuation of apparent error and unaccountable temporary delusion.

The English boast of a reputation for practical good sense, and sound philosophy. As a nation, we are certainly neither apt to indulge in extravagant pursuits of our own creation, nor to adopt those of our neighbours; but still there are individuals amongst us, it would seem,

* See Wolfart's Annals, vol. i. part i. p. 138, and p. 183; and Bork's Heilungen durch Magnetismus, p. 21 and 84.

who can be emulators to a certain extent, of the exploits of the continental philosophers, whose labours we have faithfully commemorated above. It might have been supposed that animal magnetism would here assume a more rational shape than on the continent; but the fact is, in even the trifling extent to which comparatively it has been enabled to develop itself here, it has given promise of greater contradiction and absurdities than it has anywhere else presented. In no other country has it been prosecuted with a more blind empiricism, or with such apparent ignorance of the progress which it has elsewhere made. Our magnetisers have began *de novo*, not, it would appear, because they doubted the truth of the results which others had arrived at in the science, but because they never took the trouble to enquire into the nature of these results. The history of their favorite science they only seem to have studied in the Reports of French commissions, and in a few other similar, unsatisfactory documents: of the hundred authors who have written in German on the subject, not one appears to have been studied by their English brethren.

The most noted magnetisers, during the last two years in London, have been Dr. Elliotson, Mr. Mayo, Dr. Macreight, Dr. Sigmond, and M. Dupotet. Dr. Elliotson seems to have entertained no theory of the art, but to have confined himself simply to the research of facts; and the nature of those which he has encountered, has been such as to lead him to adopt views partaking, more or less, of the character of all the continental schools. His system, as far as we can learn from some of the conclusions to which he has arrived, will prove to be eclectic: he combines the doctrines of Mesmer with those of the somnambulisers. Though himself a somnambuliser, he allows "that it is not necessary that a *sensible* effect should be produced in cases in which nervous diseases are successfully treated by the process of magnetism."* In this respect he approaches the school of Ziermann and Andresse, but his patients, the O'Keys present phenomena, which can only be classed with those observed in the case of the Prophetess of Prevorst. One of them was asked, while in somnambulism, " whether she could lift eighty-four pounds." She replied, that "the negro,"—a spirit, which she says constantly attends her, and whom she consults on various occasions, told her, " she could lift eighty, but it would hurt her ribs."† Though, amongst the facts ascertained by Dr. Elliotson, there are many from which every German theorist might draw proofs of the truth of his particular doctrine; though some confirm the views of Kluge, and some those of Kerner; there are others that tend to refute every theory which has ever been constructed on the subject. Such are the dangers of eclecticism! Such a fact as the following, demolishes at once the foundation of all the continental systems of magnetism. " Dr. Elliotson coming in front of the patient, caused her to magnetise herself, by desiring her to make bows to her face," with one hand. After half a dozen of these passes she fell asleep! Hitherto, all professors of this singular science, however they may have differed on minor or even major points, have agreed that its essential foundation is the action of one organism upon another. But here we have a person, at once som-

nambuliser and somnambulist, magnetising herself. This discovery at once renders obsolete the four hundred German volumes on magnetism. Another fact is, not merely generally but magnetically absurd; not merely a stumbling-block to common sense and ordinary criticism, but to the very principles of the magnetisers themselves. " Mr. Wood was led to try the effects of magnetising the reflection of Jane O'Key in a looking-glass. Being told to look at herself in an unframed glass, two passes were made at her image, when she fell into the same condition of sleep as when magnetised personally. The glass being held obliquely, the same result followed, though her attention was drawn elsewhere."* This experiment was varied in several ways, and was always attended with equally singular results. Jane O'Key mixed with her somnambulic conversation some snatches of an unknown tongue. A board was placed before her eyes, upon which she sang, " Sound the loud timbrel," and on coming to the line, " Jehovah shall triumph," she said to the board, " Will you triumph, you dirty beast. I'm sure you won't, Misce crutis, crece croo," words which were unintelligible.† This unknown tongue evidently bears a greater resemblance to dog-latin than to those Coptic and Hebrew languages, from which the sublime Prophetess of Prevorst derived her somnambulic voice. But though of a far lower degree than the latter heroine of transcendentalism, and though, in her case, somnambulism did not seem, as with Kluge's impregnably virtuous patients, to elevate and purify the character, but rather the contrary, O'Key has still well earned the appellation of the " Prophetess of St. Pancras;" for we learn from Earl Stanhope, " that Dr. Elliotson had written to him to say, that O'Key had foretold the occurrence of a severe rheumatic pain eighty-four hours before, and the disease actually came on at that time."‡

We shall make no comments on the new doctrines which have been broached on the subject of magnetism in this country, and which we now proceed to describe in the words of their professors, leaving it to the reader to learn, from their internal contradictions, and from their incompatibility with each other, and with those of continental sages, the forlorn and hopeless state of this science of delusion. Dr. Macreight is of opinion, that " Mesmerism is not a cure for a disease, but a cure for particular persons, diseases of any kind occurring in whom this agent would cure."§ Dr. Sigmond says, " The art seems to me to consist in obliging the individual again to inspire, by the nostril, the carbon he has already expired, whilst the currents of air caused by the extended fingers produce some effect upon the facial nerves, thus inducing the eye-lids to fall down."|| Mr. Mayo is certain, that " by *looking* upon a *mesmerisable* body, you may so mesmerise it, that *another mesmerisable substance laid upon it shall from it be mesmerised* sufficiently to produce decided mesmeric effects upon patients susceptible of this peculiar agency."¶ " I think," says he, " that the phenomena of prevision and transposition of sensation naturally lead to the supposition, that they result from the workings of a spiritual nature, in a certain

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independence of those bodily organs to which it is normally closely tied and bound; from the mind being in part dislocated and displaced from her corporeal tenement, holding on with misplaced attributes to unaccustomed points and corners of the frame."

The patients to whom Mesmerism has in this country been principally indebted for the development of its most singular phenomena are two girls, Jane and Elizabeth O'Key, the former of whom, previous to her admission to the North London Hospital, and treatment by Dr. Elliotson, was under the care of Dr. Theophilus Thomson, who states, "that he attended her originally for phrenitis, which was followed by epilectic fits. Depletion and calomel for a time relieved her, but the fits eventually returned, and resisted the treatment employed. He found her on one occasion with the senses, vision included, apparently suspended; this lasted for a day or two. On another occasion he found her in a state of 'classical' delirium, in which she had an extraordinary memory of the names of diseases, and the remedies which are employed for them. All these effects had occurred independently of animal magnetism,"* to which state accordingly, to use the expression of Bertrand, she was very easily "*façonnée*." Mr. Wakley says, however, that Jane appears, on a cursory examination to be but a tame copy of her sister Elizabeth, "who is a genius in her line." This is betrayed by her dark, piercing eye, her wonderful performances, and the power which she exercises over all who have come much in contact with her. Her improvisations at the mesmeric sittings, the witticisms, the sarcasms, the snatches of song, were not unfrequently worthy of the licensed fool of the old comedy: the audience was often amused, when the jokes derived their raciness neither from ribaldry, profanity, nor obscenity. Her very impudence was *naif*. The talent which she possesses in greatest perfection is imitation. In the course of some experiments (at Mr. Wakley's house) she took occasion to descant on "affected young ladies," gave several examples of the character delicately drawn, and, having worked up the imagination of the audience, concluded with a characteristic interrogatory,—" Now what would I do with such a *fine* young lady? Why kick her—to be sure."† He thinks, that as an actress, she would make the fortune of a theatrical manager; and states, that she formerly figured as a prophetess and performer in the unknown tongue at the Rev. E. Irving's chapel.

The exhibitions and experiments made at the North London Hospital, and reported in the Lancet, equal in marvellous absurdity and incredible credulity anything which has ever been reported of continental magnetism. On Sunday, June 3, Elizabeth O'Key was lying dressed on her bed; Dr. Elliotson, Mr. Wood, Mr. H. Mayo, the Rev. Mr. J——, Mr. J. Thomson, and the various patients and nurses were in the ward. "At a quarter to five, Mr. Wood, with some difficulty, woke her by rubbing the eyebrows and pressing the palms: she rose up in bed, and presented a peculiar expression of countenance; one of fierceness and resolution. Her features were rigid, firmly set, and sharpened with intensity of feeling. She might be likened to an eagle, wounded in the wing, and brought to the ground, eager to tear some enemy, but imbecile from want of

* Lancet, 1837-38, p. 379.   † Ibid. p. 873.

motive power.   A piece of paper was thrown to her, she tore it into
fragments with her hands and mouth. ' O'Key, O'Key,' Dr. Elliotson
said.   ' Leave me alone, you villain, do!' she exclaimed, darting to-
wards him with the ferocity of a tiger. (Her voice was full, sepulchral,
and resonant, having the depth and force of a powerful adult voice,)
' you —! get away.' .... Dr. Elliotson tried to mesmerise her. The
process had no result.   Mr. Wood,—' Where's the negro, O'Key?'
O'Key, ' You — fool be off.'" Details of this description too filthy to sully
our pages withal, fill no less than three columns. In triviality, repetition,
and evident credulity of the observers, they remind us strongly of the
cases and conversations given in Wolfart's Annals; much more so than
we should at first be led to anticipate.

The following scene may be taken as a fair specimen of the exhibitions
at the North London Hospital, which were attended by nnmbers of the
aristocracy, and by several individuals of scientific eminence.

" Elizabeth O'Key was put to sleep with a single pass.   Jane, on seeing her,
laughed; and, hugging her, said, 'Oh! you silly thing, you shouldn't live that way.'
Dr. Elliotson remarked, as every one was struck with her peculiar manners, 'that
she was one of the best-hearted girls in the world.'   Some gentleman sat on the
ground to rest, 'Oh! don't sit that way,' she said, 'Your name isn't Norval, if you
sit in that poor place.'   Dr. Elliotson, 'Look up there,' (at the crowd.)   O'Key,
' Oh! what a many white ones.   Why, where the d—l did you all come from?'
(*Great laughter.*)   As she spoke, a slight pass of the hand from some visitor be-
hind her stupified her; and, as she stood, Mr. Wood also behind her, to the right,
drew his hand, pointed towards her side, at a yard distance, gradually away from
her.   The process turned her round from a front position to an oblique one.   He
continued the motion with his hand, and the girl fell asleep, and dropped to the
floor.   She was awoke by blowing on her eyes, and on recovering her legs began to
skip and sing,—

> ' I went into a tailor's shop,
> To buy a suit of clothes,
> But where the money came from,
> G—— A—— knows.'

Immense laughter followed this distich, and from that she proceeded to sing—

> ' Malbrook she went to be shaved
> And the barber he cut her white chin,'

when her *volatility* being too great for any other experiments, Dr. Elliotson said,
' he must stupify her,' which a single pass of one finger, before her face, effected in
a moment; the girl passing from the state of excessive merriment to that of cataleptic
rigidity."•

We need not, we presume, dwell on the experiments by which Mr.
Wakley proved that the pretended magnetic phenomena observed in the
O'Keys were developed by these girls at will, or at any rate were not
the result of any mesmeric influence or agent, but occurred as well with-
out as with the manipulations which are supposed to communicate the
latter.   Dr. Elliotson (and here again he adopted principles novel and
adverse to the systems of his continental brethren, holding that the
nature of its medium essentially modifies the effects of the Mesmeric
agent,) asserted that magnetised nickel produced remarkable and
peculiar symptoms, and that lead produced none at all; but on pieces

* Lancet, 1837-38.

of both these metals being successively applied to the hands of Elizabeth O'Key, no effects at all were produced at first, and afterwards the expected phenomena made their appearance on her hand being rubbed with a piece of lead and a farthing. In the same way mesmerised water and mesmerised sovereigns produced no effect upon either of the sisters, though they both of them became sometimes " fixed" or " stupified," by the contact of an unmagnetised sovereign, or by sipping unmagnetised water.

Over the other details of London magnetic experience we willingly draw a veil. Our object has not been to give expression to our feelings, but to present to the reader's consideration an historical record, which may be reflected upon with some benefit. Neither would we be so far influenced by the impostures occasionally practised under the name of magnetism, as wholly to deny that some of the phenomena, from time to time produced by all aspirers to the art, seem to result either from some principle heretofore unknown and not yet correctly designated, or from some modification of recognized principles in the animal economy which cannot yet be accurately limited or defined. The whole of man's existence is too mysterious, and he is surrounded by too many things utterly beyond his comprehension, to justify an obstinate disbelief of things hard to be understood. In the constant attempts of the human intellect to penetrate the thick curtain that hangs all around it, doubtless some transitory glimpses of hidden truths are now and then accorded to quick intellects and peculiar organizations; and there is ever much more in heaven and earth " than is taught in our philosophy." The temporal guides of man, however, are his senses and his reason; and when he lays claim to a wisdom and to powers which are incapable of being made palpable to the one or explicable to the other, although we may not presume to say that he cannot possibly be right, he must expect that we make very diligent use of our own senses and our own reason in the investigation of his evidence; and industriously endeavour to untwist the double chain of truth and fancy, which he would fain twine round our puzzled understandings.

*Recherches pratiques sur l'Inspection et la Mensuration de la Poitrine,
considérées comme Moyens diagnostiques complémentaires de la Per-
cussion et de l'Auscultation.* Par Eug. J. Woillez, m.d., Médecin
de la Maison d'Aliénés de Clermont; Membre Cor. de la Soc. Méd.
d'Observation de Paris, &c.—*Paris*, 1838. 8vo. pp. 496.

*Practical Researches on the Inspection and Mensuration of the Chest,
considered as complementary of Percussion and Auscultation.* By
E. J. Woillez, m.d.—*Paris*, 1838. 8vo. pp. 496.

This is a work of very considerable merit; and, when we regard the
comparative youth of the author, it must be allowed to indicate talent of
no ordinary kind. Its distinctive character is, that it seeks to establish,
with equal precision, the form of the chest in the normal state,—that
which arises under such aberrations as cannot be traced to the influence
of disease,—and, lastly, the variations directly produced by pathological
causes. By this mode of investigation, the author expects greatly to
facilitate the discrimination of all changes of form originating in disease,
and thus signally to improve practical diagnosis. This excellent and
sound method of prosecuting his enquiry gives even the pathological
division of his work (wherein alone M. Woillez has, so far as we believe,
been forestalled by any,) almost the importance and interest of complete
novelty; for the observations on this head made by Dupuytren, Bouillaud,
even by Louis, Dr. Stokes, and others, are only particular, limited to
certain morbid states, and embrace no attempt at discovering the gene-
ral laws regulating the deviations to which the form of the pectoral
cavity is subject. The great fault we have to find with M. Woillez,
and almost all his brethren of "the School of Observation," is, that they
have deduced their conclusions from too few data, which are therefore
liable to be reversed by future observers who may take a more compre-
hensive view. The authors are, unfortunately, at least as fond of fame
as of philosophy; and their impatience for notoriety makes them pluck
their fruits before they are ripe. Still, as these publications all contain
a certain portion of facts, at least,—and facts faithfully observed and
reported,—and as the conclusions drawn from them are valuable as far
as they are borne out, (surely of a very different value from the visionary
and hypothetical notions promulgated by many preceding schools, which
scarcely required facts at all for their construction,) we are always glad
to receive and to notice them. Our readers, we trust, will make due
allowance for the deficiencies just adverted to, and separate, in their
estimation, the legitimate from the illegitimate conclusions, and the solid
facts from both.

M. Woillez commenced his labours by the collection of 197 cases in
the wards of La Pitié and the Hôtel Dieu. These were taken without
selection; except in so far as the author confined his investigations to the
male sex, which was done with the obvious motive of securing a more
complete examination than could have been obtained among females.
These subjects are divided into two classes: in the one are included such
individuals as are free from symptoms depending on the thoracic organs
at the time of examination, and had never previously suffered from pec-

toral complaints; in the other, persons who had at a former period laboured under, or were when examined labouring under, thoracic disease, or such affections of the upper abdominal viscera as might exercise an influence on the form of the thorax. From the former M. Woillez derived his materials for the determination of the physiological shape and dimensions of the chest; from the latter, his pathological inferences.

In his opening pages, M. Woillez shows that he is not free from the passion for nosologisms characteristic of the French school generally. The elasticity of the lung is styled its *concentric force;* by *eccentric force* we are to understand that by which the diaphragm and intercostal muscles augment the capacity of the chest; when fully acted on by its elasticity, the lung is said to present its *positive volume;* and, when expanded in virtue of its extensibility so as to fill one side of the chest, that organ is said to have acquired its *relative volume.* We do not, however, object to these terms, especially to the two last, as they prove evidently useful in the course of the work. The concentric force of the lung is well illustrated in the following passage:

" When a vessel full of water is turned upside down in a chemical water-trough, the liquid within, instead of pressing against the walls of the vessel, evidently inclines, by virtue of its gravity, to escape from them. But this inclination or force is insufficient to overcome the pressure of the atmosphere, and consequently the water remains in contact with the walls of the vessel. Now, each side of the chest may be accurately compared to the vessel, and the lung to the water: the only distinction is, that in the latter instance it is not gravity that tends to operate the separation, but the proper elasticity of the lung: and if in both instances we neutralize the action of atmospheric pressure by allowing air to enter between the walls of the containing body and its contents,—in other words, to enter into the spot where there exists a tendency to a vacuum,—nothing will any longer prevent the action of gravity, on the one hand, from causing the escape of the water, and the elasticity of the lung, on the other, from diminishing the size of that organ." (p. 2.)

This illustration places in a very clear point of view the difference between the abdominal and thoracic organs, as regards their relation to the walls of their respective cavities: the former press with their entire weight against the abdominal parietes; the latter have a constant tendency to escape from theirs.

On the *momentary* changes of the form of the chest occurring in health and disease, much less is told us than the rather pompous heading to a chapter perhaps entitles us to expect. It appears that the physiological changes of the thoracic walls belonging to this class,—that is, those produced by the normal actions of the contained viscera,—consist solely of a decreased depression or temporary effacement of the intercostal spaces. This only takes place, too, when the act of respiration is forced: when effected without manifest effort, those hollows always remain apparent. Their persistence in calm *inspiration* is a necessary consequence of the play of the concentric force of the lung, which acquires increased power from the dilatation of the chest caused by the preceding inspiration. From their existence during gentle *expiration,* the author infers that that movement is solely produced by the elasticity of the lungs. Respecting the momentary modifications produced by *morbid* actions of the pectoral viscera, to which class the author refers cough, dyspnœa, excessive impulse of the heart or large vessels, there is no fact of much interest recorded. As might be expected, the same

disappearance of the intercostal hollows takes place in the expiratory movement of cough as in forced expiration of other kinds. It is right to state that these different temporary phenomena, which must not be confounded with the permanent changes forming the main subject of M. Woillez's book, can be conveniently observed in very thin subjects only. Their chief interest lies in the obvious enquiry they suggest, whether their prolonged or frequent occurrence may in the end produce persistent deformity.

The general form of the chest depends on the relative extent of its different diameters; but especially, according to our author, of the antero-posterior and transverse. The symmetrical conformation of parts is estimated by a comparison of the two sides in the corresponding regions. Inspection and Mensuration are the chief means of coming to an accurate decision on these points. In theory, nothing can seem more easy than those operations; but we venture to assert that, in practice, none are found more beset with difficulties. There is really scarcely any comparison to be made in this respect between them and auscultation. They require for their proper execution not only a fund of care and patience in the observer, but of intelligence and good will in the observed. The position of the patient's head, the fall of his arms, the laxity or tension of his muscles, the degree of evenness of the place on which he is stretched, will materially affect the results of the examination. In M. Woillez's nine pages on the best methods of proceeding we, consequently, do not find a word too much, or an improbable difficulty started. Like M. Louis, he recommends the inspection of the chest in three different postures of the patient: lying in bed, seated in bed, standing, or seated on a chair. Of these, without meaning to discredit the evidence afforded by the others, the last should, we conceive, be always resorted to in preference, when practicable. Comparative certainty in its results is even, *à priori*, to be looked for, from the evident less chance of malposition of the limbs or thorax through muscular contraction; but in practice we have found it incomparably superior.

Of the different possible admeasurements of the chest, that of its circumference has alone been undertaken by M. Woillez. We do not share his opinion as to the greater difficulty of some of the others because instruments are required for their performance. On the contrary, the unyielding character of an instrument saves the operator from the main source of fallacy to which he is exposed in making the circular measurement with the ordinary linen measure. M. Woillez is now, he informs us, engaged in further researches, in which the antero-posterior, transverse, and vertical diameters of the chest are his chief concern. In making his circular measurements, he employed a tailor's measure smeared with a kind of varnish, which, he states, destroys its elasticity without affecting its pliability. In its application, he recommends it to be tightened sufficiently to depress the soft parts; an injunction of which we question the propriety: for, as he admits himself, a very slight difference of pressure in the operation may seriously modify its results; and it seems particularly strange to find him enjoining pressure in a special manner in fat subjects, in whom, according to his own observation, its less or greater force may easily cause so wide a variation as half an inch in the measurement obtained. The benefit stated to be derived from this

mode of proceeding is, that the results will approach more closely to what they would be if the individuals were thin. This unquestionably would be a great advantage, if the principal point were to determine and compare the absolute capacity of the entire chest in a number of subjects; but, both in reality and in M. Woillez's pages, this is a secondary object of enquiry.

Our author does not reckon the *ordinary* movements of respiration among the modifiers of the results of mensuration. In full-chested persons, he found the extent of each side increased by three centimètres* during strong inspiration; but, when this was calm, no dilatation was shown by the measure. The cause of this is not evident; unless we admit it to be the simple difficulty of estimating half of so trifling an expansion as the entire cavity undergoes. Yet nothing more satisfactory is, if we credit M. Woillez, to be learned by throwing the measure round the entire chest at once; for, in sixty cases in which he followed this, the ordinary plan, the general movement and dilatation of the thorax prevented him from making an accurate calculation of its alteration of size. Our author's sole measurement, it is important to remember, was in all instances made from the median part of the ensiform cartilage to the spinous processes of the vertebræ. This is evidently not enough, however, though M. Woillez is quite excusable for not having increased the number, as he would have thereby increased, out of all proportion, the difficulties of his analysis. A perfect estimate of the chest's dimensions should, we think, require the following measurements. Every one of them is, or may become, of importance in a diagnostic point of view.

	A. GENERAL.	B. PARTIAL.
a. Circular	1. Midway between nipples and clavicle. 2. On level of nipples. 3. Opposite ensiform process. 4. Opposite umbilicus.	*a.* Horizontal { From each nipple to median line of sternum.
b. Transverse	1. From point of one acromion to that of the other. 2. On level of nipples.	*b.* Vertical { 1. From sterno-clavicular articulation to nipple. 2. From nipple to antero-superior spinous process of ileum.† 3. From most dependent point of twelfth rib to same process.‡
c. Antero-posterior	1. On level of nipples. 2. Under clavicles.	
d. Vertical.		

The total number of cases analyzed by M. Woillez amounts to 197. Of these, 73 belong to the physiological order; 124 to the pathological. How these terms are to be understood we have already explained. No pains appear to have been spared by the author in investigating the previous history of his patients; and the reader may therefore, we think, rest satisfied as regards a fundamental point, the correctness of the above classification.

It is important to premise that, by a regularly formed chest, M. Woillez understands one "perfectly symmetrical in all its parts, free from partial

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* The centimètre is equal to 0·393708 of an English inch.

† We have found a difference of three fourths an inch between the sides in this measurement in cases of chronic pleurisy.

‡ In the same affection we have noted half an inch difference in this measurement.

anormal prominences or depressions, and presenting a visible excess in its transverse to its antero-posterior diameter." (p. 28.) The meaning here is fortunately more clear than the expression. By anormal (the word which causes the difficulty, and gives the whole definition the air of a truism,) M. Woillez means those elevations and depressions distinct from the well-known intercostal and sternal hollows, &c. which he calls normal and has described at length. All modifications of the regular form are styled *heteromorphisms:* these are either, from their extent, *partial* or *general.* Moreover, as deviations from the perfect type may exist where no morbid action, either in the thorax or abdomen, can be traced in their production, we have a class of *physiological* heteromorphisms; while such as have been obviously effected by diseased action within those cavities constitute the order *pathological.*

We shall introduce our analysis of the author's summary by two or three tables, from which a number of propositions are derived: they refer to the age, trades, strength, and stoutness of his patients.

1. AGE.			2. TRADES.	
19 subjects were aged from	15 to 20		Non-laborious	64
71	21 to 30		Employing upper extremities much .	83
44	31 to 40		Requiring active exertion of the whole frame . . . . . }	50
26	41 to 50			
22	51 to 60			
9	61 to 70			
6	71 to 78			

3. STRENGTH.		4. STOUTNESS.	
Robust subjects	67	Fat subjects	26
Moderately strong . . .	107	Moderately full in person . .	135
Weak	23	Spare in habit	36

A regularly formed chest, according to M. Woillez's definition, is much more rare than we should have imagined: the thorax had that character in forty-one subjects only. As no accurate investigation of the matter had ever been previously made, our erroneous impression is not to be wondered at. The comparative frequency of perfect conformation at different ages is shown in the following table:

From æt. 15 to 30	23 subjects	$= 0{\cdot}25\frac{5}{9}$
...... 31 to 40	9 ...	$= 0{\cdot}20\frac{5}{11}$
...... 41 to 50	5 ...	$= 0{\cdot}19\frac{3}{13}$
...... 51 to 60	4 ...	$= 0{\cdot}18\frac{2}{11}$
...... 61 to 70	0	

The decimals are calculated by comparing the number of perfectly formed individuals in each period with the total number of patients of that age; they, therefore, represent accurately the relative frequency of well-formed thoraxes among those patients. We cannot admit, however, that the number of facts here examined is sufficient to give the results from them the importance of a law; but we think we shall not widely err in affirming, on the authority of this table, that, in a series of individuals of advanced age, there will be found fewer regularly-built chests than among a like number of young subjects.

In M. Woillez's three categories of inactive occupations, of those requiring exertion of the upper extremities, and of those by which the whole frame is kept in active play, the respective numbers of well-formed

chests were 16, 18, and 7: so that their relative frequency was 0·25, 0·21$\frac{57}{83}$, and 0·14. The result of observation here coincides remarkably with what might in theory have been expected. Other tables show but a very trifling difference indeed in the frequency of well-formed thoraxes in individuals varying in point of strength, height, and fulness of person. Every one of the left-handed subjects met with by our observer presented a peculiar defect, of which we shall presently give some account. The conformation of the chest is more frequently found perfect in individuals who have never suffered from pectoral complaints than in those of the opposite description. Of the 41 well-formed subjects, 26 belonged to the former class, 15 to the second. The relative majority, too, is greater than the absolute.

> Of 86 physiological cases, 26, or 0·30$\frac{10}{43}$ were found perfect;
> 111 pathological ... 15, or 0·13$\frac{57}{111}$ ......

But this difference is nothing more than might be expected when we re-collect that physiological heteromorphisms may exist in subjects affected with thoracic disease, as well as in those free from them; while the former are, in addition, exposed to the chance of pathological deformity.

The numerical method has brought to light very unlooked-for truths; but assuredly it has produced no more startling result than that with which the chapter on *physiological* heteromorphisms opens. We allude to the fact that 132* out of his 197 patients presented modifications of form belonging to this class. Of these, as we have already said, some were *partial;* others, affecting the normal ratio of the different diameters of the chest, *general.*

The partial heteromorphisms are first examined, and the author commences with such as affect the sternal region, including prominences, depressions, and deviations. Of the former he met with thirty examples; in all of which, with one exception, the prominence existed at the articulation of the two upper pieces of the sternum. These deviations of form are shown by a table not to be congenital, but developed with the progress of years. It is evident they exercise no unfavorable influence on the duration of life. However, our author's observations throw no light on the cause of their appearance: trade, strength, height, &c. possess no marked influence in this way. Depression of the sternum existed in twenty-two subjects. In two instances they were congenital, and seated at the central portion of the bone; in the rest accidental, and affecting its inferior part. The latter, so far as M. Woillez's experience goes, are not produced in the manner usually supposed, by continual pressure on the part. On the contrary, of his twenty-two cases, three only occurred in shoemakers, (though he met with twelve individuals belonging to that trade;) while, of the remaining nineteen subjects with depressed sternum two only (they were turners) were in every way exposed to pressure of that bone. Nor would it appear that there are any grounds for the current belief that this depression affects injuriously the subjacent

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* This is a greater number than that of the physiological cases; the surplus is made up by such subjects affected with thoracic disease as presented heteromorphisms of exactly the same description as subjects who had never had any pectoral complaint. Their cases are, for this reason, called physiological, though ranked generally with the pathological. It must be confessed that some confusion arises from the different uses of the word physiological.

organs. In his two cases of congenital depression, no pectoral disorder had ever existed, though the patients had passed their thirtieth year. Besides, sternal depression occurs with somewhat greater frequency in his physiological cases than in the others. It has been also supposed that the heteromorphism under consideration occasions asthma. On first sight, M. Woillez's cases seem to support that opinion; for six of the twenty-two patients were subject to dyspnœa, and they were all affected with marked pulmonary emphysema. M. Woillez, however, contends, with many others, that asthma is something different from both dyspnœa and emphysema.

M. Woillez met with but one example of lateral deviation of the sternum independent of dorso-vertebral curvature. The middle line of the bone inclined in this case slightly to the right at its lower part, and the deviation had given an arched shape to the right external side of the chest. A similar phenomenon, as is well known, occurs in cases of curvature of the spine. The displacement in this subject appeared to have originated in the constant contraction of the right pectoralis major required in the exercise of his calling, that of a water-carrier.

The next class of *latero-anterior* heteromorphisms comprehends seven varieties. Foremost comes undue prominence of the left side, occurring in fifty-two subjects. This elevation, as observed by M. Woillez, cannot be the same as that described by writers as a consequence of marked right dorso-vertebral curvature; for no such deformity existed in any of those fifty-two subjects. Besides, among thirteen patients in whom the latter did exist, the heteromorphism in question was observed three times only. Considered in itself, this prominence presents no irregularity of form, and it evidently consists solely in an increased convexity of the part. It may be *general*, that is, it may occupy the whole left anterior thoracic region; or be, as the author terms it, *sterno-mammary;* in which case it is bounded by the nipple externally, and terminates above about an inch below the clavicle. Both kinds are visible on first inspection, if the subject be well placed. When either is marked, the difference of convexity between the two sides of the chest is calculated approximatively by M. Woillez at three or four lines. In fat subjects, the surface of heteromorphism is described to be uniform; in meager individuals, the natural prominence of the ribs and hollowness of the intercostal spaces are both increased, so that the characteristic unevenness of the chest is proportionally augmented. But the anterior left prominence is not in all instances produced by undue convexity of the ribs: the application of the hand shows that, in certain individuals, it depends on hypertrophy of the soft parts. The dull sound, too, elicited by percussion gives similar evidence; and, what is remarkable, this species of prominence would appear to be peculiar to *left-handed* subjects; at least, six such persons met with by our author presented a prominence in this region. In three of them it was clearly due to relative thickness of the soft parts; the fatness of the others prevented its exact character from being satisfactorily made out, but it certainly had not the manifest appearance of *costal* convexity. These facts receive corroboration from the total absence of the prominence in forty-seven right-handed patients; but we cannot think M. Woillez happy in his conjecture as to the cause of this peculiarity. He is surely hardly defensible in

accounting for it by hypertrophy of the left pectoralis muscle, conse-
quent on its great action in left-handed subjects, when he has encoun-
tered no example of similarly constituted prominence in right-handed
subjects on the right side.   Dissection can alone decide the question.

The cause of left anterior prominences generally is obscure.   They
occur at every age, in M. Woillez's tables, with nearly equal frequency,
and appear uninfluenced by trades; but they are somewhat more fre-
quent among robust, full, and tall subjects than the weak, spare, and
short of stature.   They cannot be said to exercise any injurious effects
on the thoracic viscera; for they existed in 0·32 of the physiological
cases, and only in 0·21 of the pathological.   The increased convexity of
the ribs forming them does not involve any diminution in their remaining
length.   This is shown as well by the regularity of form of other parts of
the chest as by mensuration, which proves the existence of an actual ex-
pansion of the thoracic walls.

The next variety of the present class, *anterior right prominence*, is
extremely rare as a physiological heteromorphism: it occurred in two
only of M. Woillez's cases.   The third variety, a *symmetrical prominence
of the sides*, quite distinct from that produced by excessive growth of the
breasts, occurred in the same number of instances.   Under *irregular
anterior prominences* he comprehends some very rare cases, five in num-
ber, wherein the sternal extremities of the costal cartilages were unduly
elevated.   When a single rib is prominent, the second is always the seat
of the heteromorphism.   This peculiarity occurred in twelve cases.   He
observed but two examples of his sixth variety, *anterior lateral depres-
sion*.   On the *relative position of the nipples* he founds his seventh series.
It appears that the left nipple is occasionally placed from half an inch to
an inch lower than the right, in individuals who have never suffered from
thoracic disease.   M. Woillez observed this physiological departure from
symmetry in seven subjects.   In five of these it coexisted with the ante-
rior left prominence, which helps to distinguish it from the lowered
nipple of chronic pleurisy.   In no instance was the right placed lower,
in the physiological state, than the left nipple; which shows that, when
it is so placed, it constitutes a very important sign of absorption of pleu-
ritic effusion.

Of the physiological heteromorphisms of the dorsal region, that con-
sisting of a general prominence on the right side is by far the most fre-
quent.   It occurred in fifty-eight subjects, or in 0·29 of the cases; and
in nineteen instances coexisted with the left anterior prominence, of
which we have also noted the great frequency.   It seems impossible to
assign right curvature of the spine of the ordinary kind, manifested ex-
ternally by deviation of the spinous processes, as the cause of this pro-
minence; for, in the fifty-eight subjects, it was detected four times only:
but, as a species of curvature has been described by orthopedists depen-
dent on *torsion* of the vertebræ, and which does not betray itself exter-
nally by any mal-direction of those processes, M. Woillez enquires
whether such curvature might have existed in his cases.   By a close
train of induction he succeeds in showing its improbability: nevertheless,
in the absence of the evidence of dissection, we share his unwillingness
to make any decided affirmation on the point.   It is plain that, if the
dorso-lateral prominence and the torsion of the vertebræ coexisted in all

cases, the former would be a more certain external sign of vertebral deformity than even the deviation of the spinous processes; whereas, the prominence would be proved independent of vertebral curvature of every species, if the torsion did not exist.   This heteromorphism was more frequent in the physiological than in the pathological cases, in the ratio of 0·34 : 0·25; and cannot, therefore, be supposed to take any part in the production of thoracic disease or in shortening life.

Under the denomination of *general heteromorphisms*, M. Woillez comprises such as depended on an apparent want of regularity between the relative extent of the principal diameters of the chest.   Here will be found a very interesting disquisition on the *cylindrical* thorax.   The following table gives an excellent idea of the condition of the chest in the author's physiological cases, and comprises the substance of many pages:

		No. of Cases.
1.	General prominence of the right side of the back	58
2.	General left anterior prominence	52
3.	Regular conformation of the chest	41
4.	Sternal prominences	30
5.	Sternal depressions	22
6.	Transverse narrowness of the chest	17
7.	Dorso-vertebral deviation	16
8.	Double prominence of anterior part of the second ribs	12
9.	General prominence of the left side of the back	10
10.	Non-symmetrical position of nipples	8
11.	Partial prominences of the right side of the back	7
12.	Anterior prominence of one of the second ribs	4
13.	Prominence of the cartilaginous border of the left ribs	3
14.	Partial prominence of the left side of the back	2
15.	Symmetrical prominence of both sides anteriorly	2
16.	Anterior right prominence	2
17.	Lateral deviation of sternum	1
18.	Prominence of the sternal extremity of the cartilages of the left true ribs	1
19.	Double symmetrical prominence of the nipples	1
20.	Double symmetrical depression of the submammary regions	1
21.	Non-symmetrical position of shoulders	1
22.	External arching of right side	1

The cardinal fact proved by this table is, that regular conformation holds only the third rank in frequency, even in physiological cases.   As the number of heteromorphisms (251) is considerably greater than that of the subjects presenting them (135), it is clear several must have coexisted in some individuals.   Such was the case in 63 out of the 135 patients: in them two, three, four, or even five existed together.

With respect to the relation subsisting between the age of subjects and the most common of the conditions enumerated above, regular form, general prominence of the right or left back, curvature of the spine, and transverse narrowness of the chest are most frequent in young subjects; whereas, the double prominence of the second ribs, and the sternal prominences and depressions, occur in larger proportion at a more advanced age.

The facts we have so far considered are those learned by *inspection:* we now proceed to the analysis of M. Woillez's chapters on the general capacity of the chest, and on the relation subsisting between the circular

extent of its sides in the normal state; these are founded on the results of *mensuration*. The number of facts reviewed bearing on the first of these questions amounts to 133. The mean circular capacity equalled $82\frac{4}{13}$ centimètres; the lowest, 72; the largest, 97. The average varied in the following proportions with the age of the subjects:

From æt. 16 to 20	12 subjects,	$0{\cdot}75\frac{2}{3}$ mètre.	
... ... 21 to 30	55	$0{\cdot}81\frac{44}{55}$	...
...... 31 to 40	30	$0{\cdot}82\frac{1}{2}$	...
...... 41 to 50	14	$0{\cdot}84$	...
...... 51 to 60	17	$0{\cdot}85\frac{15}{17}$	...
...... 61 to 78	5	$0{\cdot}84\frac{9}{10}$	...

Hence it appears that the capacity of the thorax increases regularly from puberty to the sixtieth year; the total mean enlargement during that period amounting to ten centimètres. Other tables show that its mean extent is greater in robust, fat, and tall subjects, than in those of the opposite form or constitution. This might have been foreseen: but we were unprepared for the conclusion to which we are next led, namely, that trades requiring but little muscular exertion of any kind are more favorable to development of the chest than those bringing the upper extremities into constant and severe action. We transcribe it to show that the large number of cases examined precludes the idea of mere coincidence.

		Average capacity of the thorax.	
Non-laborious trades	46 subjects	$0{\cdot}82\frac{25}{26}$ mètre.	
Trades requiring frequent use of upper extremities,	54	$0{\cdot}80\frac{51}{54}$	...
Trades calling for activity of the whole frame .	33	$0{\cdot}84\frac{43}{66}$	...

The mean capacity of the chest varied in the strictly physiological cases, and in those in which, though ranked with the pathological, disease had not affected that capacity. The first class of sixty-six subjects gave an average of 83·4 centimètres; the second, of sixty-seven patients, a mean extent of 81·4. Now, in another part of his volume, M. Woillez has shown that, in the sixty-six former individuals, the average capacity varied between 84·4 and 81·8 centimètres; according as there existed or not physiological prominences capable of affecting the measurements. From these data he infers that the mean normal width of the thorax, when no circumstance capable of really modifying it exists, varies between 81·4 and 84·4 centimètres.

The relation subsisting in the physiological state between the circular comparative extent of the two sides of the chest, is next discussed. Symmetry of conformation, as had been shown on a small scale by other observers, is extremely rare: the right and left segments were found equal in twenty-seven only of 133 subjects. The right side was more extensive than the left in ninety-seven, and the left than the right in nine individuals. The excess of width of the right division of the chest varied from one half to five centimètres; the mean being 1·4. But, what is more remarkable, this inequality existed even in the series of thoraxes answering the description already given of perfect conformation. In thirty-six of the forty-one chests belonging to that category, the right admeasurement exceeded the left by from one to three centimètres; in five, both segments measured alike; the left consequently never exceeded the right.

From the foregoing exposition of M. Woillez's physiological facts and inferences, the reader will be enabled to judge of the stability of his conclusions respecting the pathological changes of form of the chest, whether caused by diseases of the thoracic or upper abdominal viscera. It does not enter into his plan to notice such heteromorphisms as originate in a morbid state of the walls themselves of the thorax; such as prominences produced by irregular union of fractures, tumours of the bones or of the soft parts, &c. Those to which he directs his attention are the physical effects of various diseases on the subjacent organs. They may be peculiar to those diseases, or perfectly similar to those observed in healthy subjects. And it appears, from a careful revision of his facts, that M. Woillez is correct in stating, as a general law, that the eminences and depressions of the pathological order affect a preference for such regions as are most frequently the seat of those of physiological nature. He informs us, too, as a practical point of much importance, that, in consequence of the greater normal width of the right side, morbid depressions or retractions are more easily ascertainable by mensuration when seated on that side; and, *vice versâ*, dilatations of the same kind more easily made out on the left.

We pass over the section on Bronchitis, which affection does not appear to exercise any very manifest influence on the form of the chest, and arrive at that on Pneumonia.

The reader is aware that a severe controversy formerly existed between Broussais and Laennec, respecting the possibility of dilatation of the chest as a result of hepatization of the lung; and that the point originally at issue still remains undecided. According to M. Woillez, the disagreement between observers springs from their not taking into consideration the positive volume of the lung, or its elastic force; yet, though he, of course, avails himself of his knowledge of these, he is very far, we apprehend, from removing all chance of further debate. The opinion of Laennec, who supported the negative of the question, is adopted by him on the following grounds: When the lung is hepatized in its entire extent, its elasticity is destroyed; and, as all pathologists have noticed, no contraction of its substance takes place when its chest is opened. The *positive* volume of the organ is therefore considerably increased, inasmuch as it equals the fullest *relative* volume it acquires in the healthy subject while alive. But this by no means proves that, once there is a resistance to overcome (such as that of the thoracic walls), the volume of the organ will still further increase: on the contrary, M. Woillez believes, with Laennec, that, from its diminished cohesion and loss of elasticity, it must be incapable of resisting the most trifling compressing force. There does not seem to be much more here than an application of new terms to old things well understood previously. But, be that as it will, we should have greatly preferred an inductive solution of the question from his own observation to any *à priori* attempt at its settlement, however ingenious, and however securely based in appearance on physical laws. M. Woillez is unfortunately unable to content us in this respect, as he met with but two cases of complete hepatization while engaged in the present enquiries. He informs us that a *partial* contraction, ascertainable both by inspection and mensuration, ensues at a variable period of convalescence from pneumonia; and suggests the probability of its being caused by the

absorption of the slight pleuritic effusion that usually attends the paren-
chymatous inflammation. With respect, however, to the fact of retrac-
tion occurring in the advanced stage of this disease, M. Woillez has been
anticipated by that able observer, Dr. Stokes: and the testimony of the
latter gentleman goes further than our author's; for he states that he has
seen contraction very strongly marked in a case of asthenic inflammation
of the lung, wherein " there was not the slightest appearance of liquid
effusion into the cavity of the pleura." This fact shows that M. Woillez's
explanation is not applicable in all instances of the occurrence of such
deformity. It is worthy of remark, too, that, in Dr. Stokes's case, the
contraction "seemed to affect the whole side more than what is generally
found in pleurisy."

In our recent review of the Memoirs of the Medical Society of Obser-
vation, we entered so fully into the question of the modifications of form
produced by emphysema—noticing, too, in passing, some of M. Woillez's
opinions, then known only through a thesis,—that our analysis of the
bulky chapter on that disease in the present volume need only refer to a
few of its chief points. In speaking of the physical condition of the lung
in emphysema, M. Woillez states that "its elasticity is augmented in
consequence of the hypertrophy of the walls of the vesicles." How shall
we reconcile this opinion with the assertion of Magendie, that "emphy-
sema is essentially characterized by want of elasticity in the lung?" The
contradiction is the more strange as each bases his opinion on the same
unquestionable fact, namely, that the emphysematous lung does not
contract when the chest is opened after death. The opinions are indeed
irreconcileable as they now stand; but M. Woillez has evidently made
an improper use of the word elasticity.

In the article alluded to, we noticed the important fact of the frequency
of left anterior prominence, and added a few words on its influence on
the diagnostic value of such heteromorphism in emphysema. In the work
before us this question is very closely examined: we extract a part of the
discussion.

" General anterior prominence is infinitely more frequent at the left than the right
side in emphysematous subjects. When the patients are tolerably stout in person,
these prominences are identical in appearance with the analogous physiological ones
already described; but, in the former case, percussion gives a clear sound, and aus-
cultation detects a weaker murmur than at the opposite side. When, on the other
hand, the intercostal spaces are visible, from the leanness of the patients, they are
seen to be less hollow than elsewhere, or completely effaced at the dilated part: under
these circumstances, no shadow of doubt can exist as to the pathological nature of
the prominence. But, if all the sides exist as just mentioned, except that the inter-
costal spaces are as hollow as at the non-dilated side, the prominence cannot be con-
sidered as the result of emphysema, even though the subjacent portion of the lung be
evidently affected with that disease, but as belonging to the physiological order. Such,
too, is the apparent similitude existing between these two kinds of heteromorphism
that, I am of opinion, we ought not to consider any prominence *incontestibly patho-
logical*, unless the physical signs of emphysema are more strongly marked behind it
than in any other part of the chest. It is true that, setting aside this last point, there
could not be much doubt as to the emphysematous origin of the heteromorphism, if
the intercostal spaces were less distinct there than elsewhere. Nevertheless, even in
this case, we are not authorized to make a positive assertion; because it may so hap-
pen that an emphysematous lung may begin to dilate the chest in the site of a
physiological prominence, and lead us to suppose the heteromorphism observed

wholly emphysematous. But it may be urged, that emphysema dilates the left more easily than the right side of the thorax. I confess that I believe such to be the fact in the majority of cases; but it is not the less true that we ought still to have our doubts where the emphysematous lesion appears equally developed on both sides. There would be less room for indecision, perhaps, if the prominence were on the right side: physiological prominences in that quarter are indeed so rare, that it is probable all such heteromorphisms, provided they appear pathological, do in reality belong to that class." (p. 394.)

M. Woillez's experience confirms that of M. Louis, as to the subclavian prominence constituting an almost pathognomic sign of emphysema. In his 197 cases, it occurs only where that disease existed. With regard to the form of the posterior part of the thorax in emphysema, a point neglected by M. Louis, our author found the right side generally prominent in five, and the left in two, of the twenty-four subjects whose lungs presented that lesion: and even in these few cases the heteromorphisms were identically the same in character as those observed in the physiological state; while auscultation and percussion gave no normal result in their neighbourhood. Besides, their frequency in those subjects was not greater than in healthy individuals. We subjoin the instructive table given by our author of the different heteromorphisms observed in his emphysematous cases. The mean number for each individual is 2·4.

1. Physiological Heteromorphisms.		*2. Pathological Heteromorphisms.*	
Sternal depressions . . .	6	Left sterno-mammary prominence .	2
Prominence of right side of back .	5	Anterior left general ditto . .	3
left anterior side	4	Left subclavicular ditto . . .	6
sternum . .	5	Left postclavicular ditto . .	5
left side of back .	2	Globular form of chest . . .	2
Vertebral heteromorphisms . .	2	Right sterno-mammary prominence .	2
Want of symmetry of nipples . .	2	Right subclavicular ditto . .	1
Double anterior prominence of second ⎱ rib . . . ⎰	1	Right postclavicular ditto . .	1
		Right and left postclavicular ditto .	1
lateral prominence .	1		
Prominence of cartilaginous border of ⎱ ribs . . . . ⎰	1		

3. Heteromorphisms of doubtful nature.

General left anterior prominence . . . 3
Left sterno-mammary ditto . . . 3

Neither the mean nor the extremes of thoracic capacity appear much affected by the emphysematous dilatation. This is seen by the following comparison:

	Mean capacity of chest.	Extremes of ditto.
In 24 emphysematous cases . .	83·5 cent.	75 and 95 cent.
In 133 physiological cases . .	82·3 cent.	72 and 97 cent.

The comparative circular extent of the two sides is, however, modified. Instead of finding, as in healthy subjects, a mean excess of one centimètre and a half on the right side, he ascertained that the excess averaged in these patients only three tenths of a centimètre.

Continuing his enquiries into the influence of disease of the contained viscera on the form of the chest, M. Woillez comes to that of hypertrophous heart. He first shows, by a striking quotation from his *Traité des Maladies du Cœur*, that Senac maintained hypertrophy of the heart

to be an efficient cause of permanent arching of the precordial region; and so deprives M. Bouillaud of his assumed *discovery* to the same effect. But the alleged discovery, no matter to whom it belong, is, according to M. Woillez, a mistake.   He is disinclined to admit that the seven cases reported by the latter writer as examples of vaulted form of that region, brought about by the cause in question, really afford examples of such a phenomenon; because, in the first place, in three of these cases, adhesion of the right lung, or of both, was found on dissection; and, consequently, the precordial elevation may have existed simply in appearance, owing to a real depression on the other side.   This seems sufficiently plausible for an hypothesis, in cases where the right lung was alone affected; but how it impugns the justness of M. Bouillaud's opinion, in the instances where both were diseased, we are at a loss to perceive. The probability that some of the remaining prominences were of physiological origin is urged; and, of course, we can find no proof to the contrary.   Even admitting M. Bouillaud's notion to be correct as to the cause of the dilatations he observed, precordial elevation must be a very rare consequence of hypertrophied heart, as he only noted it in seven among fifty-four subjects labouring under that affection.

M. Woillez does not add anything to our fund of means for detecting aneurism of the aorta; but attempts to prove that the existence of a prominence in the subclavicular region (a sign of which many of our readers must, like ourselves, have felt the practical value,) is not entitled, when slightly developed, to the confidence usually given it.   It is true he has shown that prominence of the second rib, as well as elevation of the upper part of the sternum, may occur in the physiological state.   But the former is excessively rare, and the latter would be free from pulsatile movement; and it is surely straining a point to suppose the observer deceived into the belief of the existence of an aneurism behind the former of these physiological heteromorphisms, by the violent beating of the heart in a nervous subject.

The influence of hypertrophied liver and spleen, and of gaseous expansion of the stomach and large intestine, on the dimensions of the lower part of the chest, is considered in three separate articles.   The prominence of the right hypochondrium, consequent on enlargement of the liver, must, beyond a doubt, increase the width of the corresponding side of the chest; but its influence on the results of mensuration is vague and but slightly marked, because the normal difference of size between the two sides, which is a variable quantity, must be taken into account.   M. Woillez is of opinion, however, that an excess of two and a half or three centimètres may justly be accounted pathological.   He is, so far as we know, the first who has investigated by mensuration the dilating action of enlarged spleen or tympanitic bowels on the thorax. He has very clearly shown that both do produce such an effect, and, what is interesting, that the expansion caused by the former will be clearly ascertainable by mensuration, when inspection discovers no irregularity of form.

We have next an elaborate article on Pleuritic Effusion.   Its most interesting feature consists in the proof it gives that, in the outset of pleurisy with effusion, the affected side is not, and cannot be, dilated.   This

is established by the help of the physiological propositions we have already dwelt on. At the earliest period of pleurisy, the effused liquid is exposed to the action of two antagonist powers. One of these is the concentric force or aspiration of the lung, which tends to draw the fluid over the entire pulmonary surface; the other is gravity, which tends to cause its accumulation at the depending parts. This latter force is at first either wholly or in a great measure overcome by the former; but, in proportion as the effusion increases, the law of gravity acquires the supremacy. The consequence is, that the liquid at first spreads over every part of the lung, and has no clearly defined upper border. During this period dilatation cannot take place, because aspiration still exists in the pleura. The second period commences as soon as the concentric force of the lung is exhausted; the fluid now gravitates to the lower part of the chest, and dilatation commences. As M. Woillez has given no calculation of the mean duration of the first period, we do not think he is quite justifiable in denying the possibility of dilatation from a pleurisy of three hours' existence, and in assuming the presence of a physiological heteromorphism in the cases where such an occurrence is stated by Laennec to have taken place. The third period is that of absorption of the effused fluid, with or without retraction of the affected side. The doctrine here advanced in explanation of the absence of dilatation in the first stage of pleuritic effusion is, to our minds, much more satisfactory than that set forth by Dr. Stokes. That pathologist conceives that paralysis of the intercostals is a necessary condition for the dilatation of these muscles, and has founded on this view an explanation, of which we willingly acknowledge the ingenuity, while we must question its probable stability. If his theory be sound, dilatation, as he himself admits, should not occur, unless in cases where inflammatory action, with diminished innervation of the muscular wall, had preceded. Now, the united experience of the most distinguished observers (if we except only Dr. Stokes himself) proves that the dilatation of emphysema is at once *costal* and *intercostal*; yet it surely will not be maintained that the muscles are in that disease affected in the manner alluded to. Besides, as was stated in a former Number, we cannot concede to Dr. Stokes that intercostal paralysis is by any means a constant occurrence in pleurisy.

The special characters of dilated thorax from pleuritic effusion are examined at great length; and those of general retraction investigated with equal care. M. Woillez regards the following peculiarities as fundamental properties, if we may so speak, of the latter species of deformity: 1. Fixed inclination of the ribs downwards. 2. Irregularity of the contracted side. 3. Depression of the shoulder of that side. 4. Lowering of the corresponding nipple. 5. Lateral deviation of the dorsal spine towards the healthy side. The importance of these distinctive marks does not require to be insisted on. But our author has also detected the frequent occurrence, in consequence of pleurisy, of limited and local retraction; a phenomenon which, we believe, had scarcely been noticed by previous observers. He enumerates five points of the chest at which he has met with this species of deformity. The following table exhibits its relative frequency, as well as that of general retraction:

Different species of Retraction.	Right side.		Left side.		Total, (27 cases.)
	Pleurisy, (10 cases.)	Pleuro-pneu-monia, (5 cases.)	Pleurisy, (9 cases.)	Pleuro-pneu-monia, (3 cases.)	
General retraction	1	0	0	0	1
anterior..............	4	2	0	0	6
Partial { antero-lateral	1	0	0	0	1
antero-posterior ...	1	0	0	0	1
posterior	1	0	3	1	5
postero-lateral	0	0	1	0	1
	8	2	4	1	15

The phenomena of double and of partial or circumscribed pleurisy furnish M. Woillez with no very remarkable inferences.

In the chapter on Pericarditic Effusion we find the important intimation that, in thirty-two cases of pericarditis, observed by M. Louis in the space of four years, elevation of the precordial region existed in every instance but one. It is no doubt possible that, in some subjects, the heteromorphism may have been either partially or wholly physiological; but its extreme regularity of occurrence shows its importance as a diagnostic sign. We do not, however, observe in these pages any novel information respecting it. Their author assumes that absorption of fluid effused into the pericardium cannot be attended with any retraction of the chest. "The heart," he urges, "is not a compressible organ, like the lung; and the false membranes organized on its surface cannot act on it, as the pulmonary pseudo-membranes do on the lung; that is, they cannot keep its volume reduced so as to prevent its advance to the walls of the chest, in proportion as absorption proceeds." Perhaps a depression of the precordial region, he continues, may be observed in individuals who have recovered from pericarditis; but such deformity should be looked on as the effect of concomitant pleurisy. This is plausible, and certainly not easily refuted: nevertheless, we do not wholly admit its correctness, and await the evidence of observation.

M. Woillez next passes to the influence of adventitious productions on the shape of the thorax; but confines his remarks to the effects of tubercle, the only species he had occasion to observe. He measured accurately the circular extent of the two sides of the chest in forty-one phthisical subjects, and found its mean capacity less by 4·7 centimètres than that of individuals free from pectoral disease. But the inference apparently deducible from this estimate is not exactly that which it really affords. In fact, the low average capacity did not depend on each individual tuberculous patient having a smaller thorax than healthy persons, (ten among them, that is, one fourth of their number, had chests of greater circular extent than the physiological standard,) but upon the extremely small pectoral development of fifteen among them. M. Woillez shall give his own conclusion from this and some other related facts.

" Narrowness of the chest does not cause a predisposition to phthisis, unless it be coupled with an incomplete development of the transverse diameter. It is therefore incorrect to say that subjects of small thoracic capacity are more liable than others to pulmonary tubercles. If the transverse diameter bear a fitting ratio to the remaining ones, the predisposition to the complaint is not stronger than in full-chested individuals. But I should add, that a few subjects, whose chest is below the standard in

lateral extent, escape the disease, when that imperfect general configuration depends on insufficient length of the ribs." (p. 484.)

Our author did not discover any heteromorphism which could be ascribed either to the accumulation of tubercles, or to the supposed contraction of the chest induced by the cicatrization of tuberculous cavities.

Before taking leave of M. Woillez, we have a few general remarks to offer. It is easy to perceive, even from the analysis which our limited space has allowed us to give of them, that its physiological section promises results of greater novelty and importance than the pathological division of the work really supplies. This is however, in a great measure, to be attributed to the comparatively small number of cases of each disease its author chanced to meet with in the course of his labours. It does not, in the smallest degree, lessen the value of such enquiries; for, as the least reflection will show, the heteromorphisms which pathologists were in the habit of assigning to given diseases could not legitimately be so assigned until they had been subjected to such investigation as they have now had at the hands of M. Woillez. He has laid the foundation whereon others may securely build. The practical importance of his researches will, we feel convinced, be many a time acknowledged at the bedside of the patient, by all physicians who are emulous of the high character of philosophic observers. The zeal with which he has laboured in the cause of truth; the patient perseverance with which he has borne the detestable task of working out their medical history from persons who have no interest in communicating it, (M. Woillez held no official appointment in the hospitals where he observed,) deserve grateful acknowledgment on our parts. He is, we are pleased to find, quite free from the dictatorial air that lessens the pleasure felt in studying most of the productions of the Medical Society of Observation. There is a happy union of the firmness of tone which the extent, originality, and method of his researches entitle him to assume, with the modesty becoming his youth and previous want of reputation. Nor does he seem to us to fall into a very common fault with those whose researches are in any degree original, that of overrating their importance. Unlike his countryman, M. Piorry, "le père de la percussion médiate," as he is fond of styling himself, and who would almost discard auscultation entirely, and give undivided empire to the plessimeter,—he everywhere regards inspection and mensuration as only secondary instruments for the discovery of pulmonary disease. The complexity of the details in the book renders its study a laborious task: this labour might, we think, be materially lessened by the construction of a general table, giving at a single view the substance of the work and the relations of its various parts. We would likewise suggest to M. Woillez, if the public call on him for a second edition, the propriety of altering his mode of using the words *physiological* and *pathological*, already adverted to.

<center>Art. III.</center>

Intermarriage: or, the Mode in which, and the Causes why, Beauty,
Health, and Intellect result from certain Unions; and Deformity,
Disease, and Insanity from others; demonstrated by Delineations of
the Structure and Forms, and Descriptions of the Functions and
Capacities which each Parent, in every Pair, bestows on Children,—
in conformity with certain Natural Laws, and by an Account of
corresponding Effects in the Breeding of Animals. Illustrated by
Drawings of Parents and Progeny. By Alexander Walker.—
London, 1838. 8vo. pp. 442.

This is in many respects a very remarkable book. We are not prepared
to admit that its author has fulfilled all the expectations excited by his
title-page; nor are we disposed to go the whole length with him in the
positions he maintains: but he has collected in support of them a mass
of facts, many of them as novel as they are unimpeachable, which ren-
ders his volume alike important and interesting to the physiologist.   In
attempting to adapt it to the taste and capacity of the public, however,
the author seems to us to have been led into the common error of intro-
ducing a quantity of comparatively worthless matter, which has a some-
what repulsive character to the scientific enquirer.   We believe that there
is scarcely one of the higher truths of any science, whether physical or
vital, which may not, by proper explanation and illustration, be brought
home to the comprehension of any person of ordinary intelligence; but
we cannot think the addition of a heap of common-place trifles, calcu-
lated only to attract the curiosity of the vulgar, a labour worthy of a
man of science.   We certainly see no reason why the public mind should
be less instructed upon such subjects than upon any other department
of physiology.   But all depends upon the *mode* in which the instruction
is given; and whilst, on the one hand, we know, from experience, that
the fundamental truths relating to the function of reproduction, both in
vegetables and in animals, may be expounded in such a manner as not
to raise a blush on the cheek of one sex or to excite an impure feeling in
well-regulated minds in the other, we also know that, in too many of the
works designed for general circulation, the converse is too apparent; all
things becoming impure to the man of gross and sensual imagination.
We do not mean to charge Mr. Walker, however, with the commission
of this fault to an extent at all to be compared with that of which we, a
short time since, expressed the strongest reprobation; but we must say
that, if there had been less in his work of an *ad captandum* nature, we
should have had much more satisfaction in recommending it to the gene-
ral reader, as we have already done to the physiological enquirer.

Mr. Walker has very properly dedicated his work to Mr. Knight,
whose extensive researches on a corresponding department of vegetable
physiology are well known, and who has contributed many of the most
valuable observations contained in the present volume.   The recent loss
of this eminent and highly respected individual has deprived science of
one of her most assiduous votaries; and his last contribution to the
Transactions of the Royal Society (which will presently be noticed) is an
ample proof that the zealous devotion of a long life to philosophical pur-

suits need cause no diminution in the relish for them, even in declining years.

In an advertisement, or rather preface, the author explains, at more length than in his title-page, the plan and objects of his treatise; and these we shall set before our readers in his own words, but somewhat abbreviated.

"The great object of this work is altogether new, and heretofore unattempted,—the establishment not merely of a new science, but of that science which is by far the most interesting to humanity, the science which, for the first time, points out and explains all the natural laws that, according to each particular choice in intermarriage, determine the precise forms and qualities of the progeny; which unfolds the mode in which and the causes why beauty, health, and intellect result from certain unions, and deformity, disease, and insanity from others; and which enables us, under all given conditions, and with absolute certainty, to predict the degree and kind of these which must result from each intermarriage.

"The philosophical bases of this science have, moreover, nothing to do with hypothesis or supposition; they are the indisputable though hitherto unapplied facts of anatomy and physiology; and their present popular applications are rendered subjects of absolute demonstration by descriptions and drawings of families, (some of them well known to the public;) while every reader has the power of adding to their number among the families of his acquaintance. They are further subjected to demonstration by all the more important facts here stated, as to the breeding of domesticated animals; facts which have not hitherto been explained or understood, and consequently have not hitherto afforded those principles on which the breeder may *now* act, with perfect certainty of the desired result.

"In the First Part of the work is given an account of the physiological conditions connected with and terminating in LOVE; the period of puberty, and the remarkable and interesting changes which it causes in the locomotive system and the voice, in the vital or nutritive system, and in the mental or thinking system, especially of woman. . . .

"In the Second Part are described the sexual relations arising from these conditions, and connected with or leading to INTERMARRIAGE. . . .

"In the Third Part are described the circumstances resulting from the preceding relations, and connected with or productive of PROGENY. . . .

"In the Fourth Part are enunciated the newly discovered laws regulating the RESEMBLANCE OF PROGENY TO PARENTS; the law of selection, where both parents are of the same variety; the law of crossing, where each parent is of a different variety; the law of in-and-in breeding, where both parents are of the same family; the law of sex, &c. . . .

"In the Fifth and Sixth Parts are described the vague methods of regulating progeny adopted in the breeding of Domesticated Animals. . . .

"In the Seventh and Eighth Parts are described the vague methods of affecting progeny adopted among MANKIND; in in-and-in, selection, and crossing; and the transcendently important subject of choice in intermarriage." (p. xvii.)

How far the author has accomplished all which he has attempted we shall now examine, passing over with slight notice the First and Second Parts, which contain a good deal that, in our judgment, is not only extraneous but offensive. We cannot say that we should have discovered anything peculiarly original in this portion of Mr. Walker's treatise, (which seems to us principally derived from the works of Virey and other prurient French writers,) had it not been for the claims advanced by the author himself. At the close of the advertisement from which we have already quoted, we find a list of sixty-one propositions, embracing "the more important original facts and opinions which the work contains." Among these is specified (No. 2) "the assignments of the cause of early

puberty and of the catamenia in woman." That our readers may not
be left in ignorance of this notable discovery, we shall give it in the au-
thor's own words:

" In early life, the three classes of organs and functions—the locomotive, the vital
or nutritive, and the mental or thinking systems,—bear the same proportion to each
other in woman as in man; and the girl is scarcely distinguishable from the boy. In
woman, this proportion is gradually departed from: her vital system, occupying
chiefly the trunk, becomes larger in general as well as in particular parts; it grows
out of proportion to the other two systems, occupying chiefly the head, or composing
the limbs; its functions follow its structure; and hence alone the earliness of that
aggregate of them which is denominated puberty." (p. 7.)

This seems to us to imply nothing more or less than the systems of or-
ganic life are altogether in a state of more advanced development in the
female than the male, after the period of early childhood; a fact which has
long been observed, and which has been curiously confirmed as to
weight by the statistical researches of Quetelet, who found that, whilst
the weight of the male predominates up to the age of eight or ten years,
the increase between that period and the age of twelve years is so rapid
that, at the latter epoch, the average weight of the female is equal to
that of the male. Subsequently, however, the male gains again upon
the female, and continues to increase both in weight and height
after she has attained her full adult period: an increase in weight, how-
ever, takes place in woman after the termination of the parturient period,
but this evidently results from other causes. By a collection of facts of
this kind, we think that Mr. Walker might have made his book much
more valuable, and not less interesting to the general reader. Another
circumstance occurs to us as curiously illustrative of the resemblance
which the children of both sexes bear to each other and to the female
parent. When the plumage of male birds (as usually happens) is more
brilliant than that of the female, the young birds of both sexes resemble
the latter in their early dress; just as among the part of mankind accus-
tomed to the artificial refinements of clothing, little boys as well as girls
are made to wear petticoats before being advanced to the dignity of
breeches.

As to the explanation of the cause of the catamenial discharge, we
cannot afford to Mr. Walker the merit which he claims for himself; and
we think it would have been much wiser in him to have rested his title to
distinction on the doctrines, of which the originality, to say the least,
no one can dispute. But our readers shall again judge for themselves.

" Woman is every month subject to a sanguineous flow from the matrix; an uni-
versal and essential event in the life of the female. The cause of this is evidently the
same with that of her early puberty, the disproportion in which the vital system is to
the locomotive and nervous systems. Thus, the female becomes possessed of a
greater quantity of blood than is required for her individual preservation. Thus, she
is enabled, when pregnant, to supply a sufficient quantity for the nourishment of the
fœtus. Thus, when suckling, she can afford the vast secretion of milk; and thus, at
all other periods, this blood, being voided, furnishes the catamenial flow." (p. 36.)

Now this explanation, which has been given by fifty authors at least,
in different language, is liable to this prominent objection, that the
menstrual fluid is *not* blood, but is essentially a secretion, being defi-
cient in one of the most important constituents of blood, namely, the
fibrin. That this periodical secretion is necessary to the preservation of

the healthy condition of the generative organs, as well as of the system at large, everybody knows; but that it does so merely by letting out the superabundant amount of blood, we deem a very false doctrine, since the ingredient which seems most essential to the formation and nutrition of solid tissues is not parted with in this manner.

From the predominance of the vital system in females, Mr. W. jumps to the conclusion that the pleasures of love are more exquisitely enjoyed by them than by the other sex; and thus solves the question which has been so frequently asked, from the time of Tiresias downwards. We shall not enter into a grave discussion of this knotty question, but simply point out that here, as in other parts of his work, Mr. Walker seems to have forgotten that distinction between the instinctive propensity which results only from the excitement of the genital system, and the moral sentiment which may exist independently of it, and which is the peculiar characteristic of the attachment between the sexes in the human species.

The Third Part of Mr. Walker's work contains much that is interesting and valuable to the physiologist. It is an old observation, that sexual attachments, both in man and the lower animals, are the strongest where each individual possesses, in the highest degree, the characteristics of the respective sex. Mr. Walker has, in his explanation of the "natural preference for various kinds of beauty," shown this principle of difference to have an extensive application. The following extracts contain his ideas upon this subject.

"There is a positive and a relative beauty: in other words, beauty differs not only in the two sexes, and in every individual of each sex, but each individual forms a different estimate of it in relation to himself. Hence, while he confesses the supremacy of a general model of beauty, and grants the superiority of the woman who most nearly approaches to it, he, for himself, decides in favour of another woman, whose beauty is less regular but more suitable to his desires. This curious fact has been often noticed, but never explained." (p. 107.)

"In my work entitled 'Beauty illustrated chiefly by an Analysis and Classification of Beauty in Woman,' it has been shown that, though one particular species of beauty will be found at all times to predominate in each individual woman, yet that there is ever a tendency, in the young woman, to beauty of the locomotive system; in the middle-aged woman, to beauty of the vital or nutritive system; and, in the older woman, to beauty of the mental or thinking system. It is not less remarkable that men of various ages generally admire precisely those species of beauty which prevail in women at corresponding ages." (p. 113.)

"As, however, woman is more precocious than man, she becomes more advanced, in reference to sex, than man at the same age; and, consequently, to be duly matched to her husband, the wife should be the younger.

"Of this admiration, then, and the consequent preference, modified as it is by age, it is necessary that the foundation should be explained. That foundation appears to be the similarity of objects and interests which are inseparable from similar periods of life, the association of these with a similar intensity of sexual desire, the consequent production of similar sympathy, and the resolve that it shall be permanent. This admiration and preference of corresponding ages secure in their turn those objects and interests without which there could be no happy superstructure." . . . "Suitable states of the vital system happily accompany this sympathy, admiration, and preference as to ages." . . .

"It would appear, then, that sympathy, admiration, and preference being thus formed, each sex naturally and necessarily seeks next, not for qualities which are its own, but for those of which it is not in possession. It seeks not those, however, in other species, where not only due adaptation for sexual purposes, but all relations of

sympathy are wanting. It seeks them the less even in the varieties of its species, that such adaptation and relation are very defective, as will be shown in the sequel. No being, then, can desire that of which it is already in possession; and the preference of that which is different from itself is founded on the absolute necessity of difference to all excitement. An animal cannot feel sexual excitement towards itself; it can feel little towards that which is like itself; it must feel most toward that which is most unlike it." (pp. 115, 116.)

In illustration and support of this view, the preference usually observed on the part of man for females of inferior height, and on the part of women for men of loftier stature; the dislike felt by women for men of effeminate character, and by men for women of masculine temperament; and the opposite results arising from a reversion of the usual conditions, are, we think, justly adduced by our author: and the various exceptions, of no unfrequent occurrence, are not unnaturally accounted for. Thus, the consideration of age may yield to some other point of attraction arising out of the physical or moral qualities of the object; and this is especially the case in temporary attachments, where the idea of permanence does not exist.

"Thus, love does not depend on abstract beauty, but on such differences as are consistent with an instinctive feeling of suitableness, which deeply affects us, which first acts upon and agitates the imagination, and which that faculty afterwards acts upon and aggrandizes. Sometimes an accidental, subordinate, and injurious difference, and the association founded upon it, influence this affection; and, by a strange blunder, the mere accidental circumstance, in after-life, is substituted for that with which it was associated." (p. 125.) . . . Hence "we frequently see women, in spite of ugliness and the absence of other combinations, attract and engage in marriage men who might have commanded beauty, accomplishment, and fortune. Certain it is (Mr. Walker adds) that love, thus excited by differences, is favorable to fecundity;" while it has been observed, on the other hand, "that, if persons of similar temperament are joined together, this similitude both produces a series of quarrels and becomes a remarkable cause of sterility.* The beneficial tendency of this law of difference does not terminate here: it leads to those slight crosses in intermarriage between persons of different organization which are as essential to the improvement of the races of men as we have found them to be to those of animals." (p. 125.)

In the section on Marriage, the author has again most unnecessarily gone out of his way, to examine the question whether violation of an adult female by a single man be possible under ordinary circumstances, and whether conception can follow such intercourse. We are disposed to agree with him in thinking that medical jurists have attached rather too little weight to the influence of the horror and disgust which must, we should think, prevail in the mind of a virtuous woman at such a time, on the acts of the organic system which are necessary to render such a coitus effectual. He fully admits the involuntary character of these acts, and allows that they may occur during a state of insensibility; but, considering the influence of violent mental emotions on other involuntary functions,—as, for example, the secretion of saliva, gastric juice, bile, &c.—he questions, and we think reasonably, the possibility of impregnation where the adverse feelings are strongly excited. It is another point to be considered, however, which has been overlooked by our

* It has been very elegantly observed (by a German author, we believe,) that love does not exist between souls that are *in unison,* but between those that *harmonize.* Only our musical readers can appreciate the force of this remark.—Rev.

author, whether a woman who has resisted to her utmost ability may not, when at last overcome, be incapable of resisting the ordinary sexual feelings excited by the coitus, and thus conceive altogether against her will. We do not see how this is to be decided, since, as Mr. Walker justly observes, little credence is to be given to the assertions of women upon these points; but, in the practice of our courts at present, so much attention is very properly given to collateral circumstances, in accusations of this kind, that the fact of conception, or the reverse, is not held to be of much importance.

In the next section, "on the Propagation of Forms and Qualities," our author introduces his particular views by a quotation from Pliny respecting the usual dissimilarity of children to one or both of their parents, upon which he observes,

"This assertion is more worthy of Pliny than of Camper; its latter part is entirely untrue. I will venture to say, that there never was a child that did not strikingly resemble both its real parents, if resemblance was looked for where it ought to be; as I shall point out in the sequel. But such assertions show the actual state of knowledge on this subject." (p. 138.)

Several well-known facts are then quoted to show the tendency to propagation of varieties of stature, form, &c., as in the case of the six-fingered family, the porcupine family, the gipsy and Jewish races, &c.; and, in the following section, the author enunciates his newly discovered laws regulating the resemblance of progeny to parents. These we shall give in his own words, forewarning our readers, however, that they are partly based upon Mr. Walker's peculiar theory of the functions of the cerebellum, (or *cerebel,* as he somewhat affectedly terms it,) which he regards as the organ of the will, and as therefore especially connected with the locomotive system. We need not stop to point out to our readers how this hypothesis of the uses of the cerebellum is at variance with the doctrines of phrenology; as, on the present occasion, our object is merely to give an account of Mr. Walker's opinions and views.

"Each parent communicates a distinct series of organs; and the only modifications which the organs communicated by either parent undergo are chiefly, if not altogether, such as are necessary to harmony of action with those communicated by the other parent, and such as are produced by difference of sex. Where both parents are of the same variety, one communicates the anterior part of the head, the osseous or bony part of the face, the forms of the organs of sense, (the external ear, under lip, lower part of the nose, and eyebrows being often modified,) and the whole of the internal nutritive system, (the contents of the trunk, and consequently its form, in so far as that depends upon its contents.) The resemblance to that parent is consequently found in the forehead and the bony parts of the face, as well as in the shape of the organs of sense, and the tone of the voice. The other parent communicates the posterior part of the head, the cerebel situated within the skull immediately above its junction with the back of the neck, and the whole of the locomotive system, (the bones, ligaments, and muscles.) The resemblance to that parent is consequently found in the backhead, the few more moveable parts of the face, and the external forms of the body, in so far as they depend on the muscles, as well as the form of the limbs, even to the fingers, toes, nails, &c." (p. 150.)

As popular illustrations of the truth of these positions, the portrait of Queen Victoria is compared with those of her father and mother; from which it appears that she has the more capacious forehead of the latter, with the general features, especially the nose and mouth, of the former:

and, on the other hand, the Duke of Reichstadt is shown to have possessed the high forehead of his father, Napoleon, and the wide backhead and developed lips of his mother, Maria Louisa. That such partial resemblances are of no unfrequent occurrence, every one must be aware; but that they are constant will, we suspect, be found rather difficult of proof. The chief point, however, which Mr. Walker seeks to establish is the association of the development of the different systems with that of the parts of the head and face, as already described. In support of this position, he brings forward a valuable body of testimony from the observations of Mr. Knight and others, communicated to him: these are, however, deficient in one respect, as they do not indicate the connexion between the cerebellum and locomotive system. Mr. Walker gets over this difficulty by remarking that, in quadrupeds, (upon which these observations have chiefly been made,) the form of the cerebellum cannot be traced externally, owing to the attachment of the powerful muscles and ligaments of the occiput. Strong in his own theory, he says,

" Concealed, however, though the backhead is in these animals, we have proofs of its various developments in the various developments of the muscular system, with which the former must always correspond, and which at all events show what each parent communicates." (p. 162.)

This is a most complete *petitio principii*, as every reader must admit. The very point which remains for Mr. Walker to prove is, that not only a certain form of face and forehead, which may be derived from either parent, coincides with a certain development of the nutritive system, but that the other parent always communicates the cerebellum and locomotive system, of which no satisfactory evidence is given in the work before us. However, we are not prepared to deny the truth of his doctrines, which can only be established or refuted by observation; and for directions as to their verification, with which we have no fault to find, we may refer to the work itself. The characters of two families are closely examined, by way of scientific illustration; and the modifying influence of particular organs upon each other is pointed out. No physiologist who reflects upon the frequent modifications of this kind which are presented to him in the different classes of animals, in order to adapt a particular function to the general conditions of existence, can refuse to admit a subordinate agency of this kind, if the truth of the presiding laws be established.

The principle that either parent may give either series of organs is remarkably illustrated in the history of the *ancon* breed of sheep, which also exhibits the tendency to the perpetuation of accidental varieties, under particular circumstances. This we shall detail, with some additional circumstances not mentioned by Mr. Walker. In the year 1791, one of the ewes on the farm of Seth Wright, in the state of Massachusetts, produced a male lamb, which, from the singular length of its body and the shortness of its legs, received the name of the *otter* breed. From the curvature of its forelegs, which caused them to appear like elbows when the animal was walking, Dr. Shuttack called it *ancon* (from αγκων.) This physical conformation, incapacitating the animal from leaping fences, appeared to the neighbouring farmers so desirable, that they wished it continued. Wright determined on breeding from this ram, and the first year obtained only two, with the same peculiarities. The fol-

lowing years he obtained greater numbers; and, when they became capable of breeding with one another, a new and strongly marked variety, before unknown to the world, was established.*

" When both parents are of the otter or ancon breed, their descendents inherit their peculiar appearance and proportions of form.   I have heard but of one questionable case of a contrary nature.   When an ancon ewe is impregnated by a common ram, the increase resembles wholly either the ewe or the ram.   [These observations evidently apply to shape alone, especially to the peculiarity under consideration.]   The increase of a common ewe, impregnated by an ancon ram, also follows entirely the one or the other.   Frequent instances have happened where common ewes have had twins by ancon rams; when one exhibited the complete marks and features of the ewe, the other of the ram.   The contrast has been rendered singularly striking when one short-legged and one long-legged ram, produced at a birth, have been seen sucking the dam at the same time." (p. 164.)

Upon this principle Mr. Walker subsequently explains the alleged cases of superfœtation, in which twins of different colours have been produced: more facts are, however, required to establish one doctrine or the other.

With regard to the communication of the psychical peculiarities of the parents, it results, from Mr. W.'s theory of the functions of the brain, that one should give the organs of sensation and observation, situated in the anterior portion of the cranium, and the other those of passion and volition, which occupy the posterior portion, while the intermediate middle part is divided.   In our present ignorance on those matters, it need scarcely be observed that this must be regarded as merely hypothetical.   Much, however, may be learned by careful and unprejudiced observation; and we set a high value on such facts as those communicated by Mr. Knight, in the section on the Hereditary Transmission of Mental Faculties, as well as in his paper on the same subject in the Philosophical Transactions for 1837.   They unequivocally prove that *acquired* habits (and we must suppose, therefore, the peculiarities of organization which are connected with these habits,) may be transmitted to the offspring so as to be manifested in them without any tuition.   As regards the lower animals, however, it seems to us that these facts harmonize with the general principle laid down by Mr. Lyell, that the instincts thus propagated have a relation to those natural to the species, being either necessary to its preservation in a wild state, or, in the case of the dog, to its peculiar association with man.   The influence of the education of successive generations of the human race on the character of the progeny, is a question of immense importance; and we agree with Mr. Walker and Mr. Knight that sufficient attention has not been paid to it.

But the question naturally arises why certain minute differences should exist between children who present the same general resemblances to their parents.   To a question of this kind put to him by a lady, Mr. Walker could only make the following reply, being prevented by " regard to propriety" from giving the more explicit answer, which he subjoins:

" ' *Observe that all these differences in features are mere modifications of your own, such modifications as you yourself might assume under the influence of different emotions, such modifications as you actually have assumed, and therefore have, in these very instances, communicated.*'

* Philosophical Transactions, 1813.

" To explain this most important and interesting point more methodically and in detail.   The reader has seen that organization and function are communicated from parents to progeny; he knows that each distinct organization must produce functions equally distinct; he knows that function always reacts on organization, as is shown by the improved forms which well-directed exercise produces on one hand, and the deteriorations which labour causes on the other; he has seen that the practice of performing certain acts in parents gives a distinct tendency to the performance of these acts in progeny; he knows, in short, that organization and function in the parent, are the real and only causes of organization and function in the child.   Can he then doubt that the peculiar state of the organization, and the peculiar exercise of every function at the moment of erotic orgasm, must exert the *most* powerful, the *most* undivided influence over the organization and function of the delicate, susceptible, and plastic *ens,* then and by these very acts called into existence?" (p. 182.)

Most of our readers know that this doctrine is by no means novel; and there will be few indisposed to admit that the *habitual* state of the parents has an important influence on the offspring.   But we cannot go so far as Mr. Walker in supposing that upon the mere *transitory* conditions, whether of mind or body, at the moment of conception, depends so much of the subsequent development of the new organism.   It must be remembered that the influence of the female is continued through a long period; and there can be no doubt that changes in her bodily and mental state may be to a certain extent communicated to the fœtus during pregnancy. We believe several instances have existed of apparent defects in the organization of children begotten in drunkenness; but we are equally assured that the child in utero may be influenced, even as to features and disposition, by impressions made on the female parent during pregnancy; so as to have a resemblance to a third person; and (to obviate cavil on a delicate point) to a female as well as male relative or acquaintance. Upon the *relative* conditions of the parents during the fertile coitus, Mr. Walker imagines the determination of the systems which each communicates to the child to depend.   Thus in whichever parent sensibility is predominant over volition, or predominant to the greatest extent (since both may be in this state), that one communicates the anterior part of the brain with the vital system, and vice versâ.   " We can no longer wonder, then" he continues, " that several children, having the organs of sense either of the father or of the mother, should differ as to each of these, and as to every feature, according to the general activity and the particular action of each at the moment of creative power."

The influence of the emotions or imagination of the female parent upon progeny is illustrated by a collection of very curious cases, which we have not space to quote; but that the law regarding the communication of the systems in general is not quite so definite as Mr. W. imagines, seems to us proved by those cases of twins in which, on Mr. W.'s own showing, the vital system is communicated to one child by the father, and to the other by the mother, and the converse as to the locomotive system.   Every one must have noticed the close resemblance which twins usually bear to each other; and there is a considerable preponderance in the number of those twin births where both children have been of the same sex; but if Mr. Walker's law of the communication of organization be true, there should be none of those exceptions which he has brought forward apparently in ignorance of their real bearing.

With regard to cross-breeding, or union of parents belonging to diffe-

rent races, Mr. W. states the following law to be founded on observation, " that where the parents are of equal age and vigour, the male gives the backhead and locomotive organs, and the female the face and nutritive organs;" and thus ingeniously accounts for the existence of this tendency, which is not, however, universal, and indeed appears (from facts as well as theory) to be less strong in proportion as the cross is feeble, or the parent stocks approach each other.

"If no being can desire that of which it is already in possession—if, on the contrary, it must desire most that which differs most (if not incompatible) it cannot be wondered that in crosses, where the desired difference is greatest, the male, in whom desire is most ardent, should stamp the systems by which he exercises desire, the voluntary and locomotive, upon the progeny. Mr. Theobald, of Stockwell, an extensive breeder, informs me that he has always thought that strong volition and great ardour on the part of the male stamps his form (*general form* depending, as already explained, chiefly on the *skeleton* which is the *basis of the locomotive system*) on progeny, a direct and singular corroboration of the cause just assigned." (p. 202.)

If, however, there be a decided difference in age, or such an inferiority in the breed of the male parent, that the father is much less vigorous than the mother, the shape is given by the latter. As the reproductive system, a part of the vital, is predominant in the female, it follows that the prolific tendencies of a cross-breed should be greater than those of the original stocks; which is well known to be the fact.   But discrimination is necessary in continuing a mixed breed, from the cause just mentioned; for as the progeny of the originally distinct parents *may* have different combinations of their organs, the produce of such would not improbably reform the original conditions of the parents.   To avoid this, it would, of course, be only necessary to select such individuals to continue the race as exhibit the correspondence of characters which it is desired to perpetuate; and this plan has been found to answer by skilful breeders, whilst those ignorant of the principle are unable to preserve it.   Many curious examples of this kind, communicated to him by uninterested observers, are detailed by Mr. Walker.   The general similarity of characters which is required for the purpose of preserving the race is very different from that *quasi* identity which is the principle of close in-and-in breeding; and when any new race is established, and thus carefully propagated, it is soon diversified by the modifications and accidents arising in an enlarging herd or flock, which permit the practice of that *selection* which is essential to the continued vigour of the breed.

A law of an opposite character prevails, according to our author, in strict in-and-in breeding; and to this we subjoin his mode of accounting for it.

" Where both parents are not only of the same variety, but of the same family in its narrowest sense, the female gives always the backhead and locomotive organs, and the male the face and nutritive organs." (p. 226.)   " As no being can desire that of which it is already in possession, as in animals bred in-and-in, there is little or no difference, little or nothing to be desired,—as no being can feel sexual excitement towards itself,—as organs unexcited do not act,—it is not to be wondered that, in in-and-in, the male no longer stamps his voluntary and locomotive systems upon the progeny." (p. 229.)

In the same manner the early failure of the reproductive power is to be accounted for, the generative system being derived with the other vital

organs from the male in whom it is least predominant.   The prejudicial effects of this mode of breeding are so well known in the human species, as well as among domesticated animals, that we shall not enlarge upon them, but simply state that Mr. Walker has collected a valuable body of facts in support of his doctrines.   To the breeder of cattle the distinctions between the results of union of different relations will doubtless be interesting and valuable; but as the human physiologist has not many opportunities of observing the offspring of a brother and sister, still less of a grandfather and granddaughter, he will not be able to verify or disprove them.

With regard to the communication of sex, Mr. Walker regards it as depending upon the relative vigour of the parent, and the quantity of the reproductive liquid; so that although the vital system, of which the generative organs are a part, may be given as a whole by one parent, the character of those organs may be determined by the other.   Although this doctrine finds support in the common opinion of the preponderance of boys while man is in the most flourishing period of life, and of girls in youth and old age, more accurate statistical examination appears to disprove it, and at the same time to indicate another curious condition on which sex depends.   The enquiries of M. Holfacker, in Germany, give as their result that, if the father be younger than the mother, or of the same age with her, the proportion of boys to girls is about 90 : 100.   If he be two or three years older, the numbers of the different sexes are, on the average equal; but the proportion of boys goes on increasing with the predominance of age on the side of the father, so that if it amount to eighteen years or more, it is nearly double that of girls, and this is the case when the father is past middle age, as well as when in the vigour of life.   These results are, it is true, deduced from a limited number of observations; but they so closely coincide with those of Mr. Sadler, that both must be regarded as generally correct.   According to the latter, if the male parent be the younger the proportion of boys to 100 girls is 86; if of equal age, the number of boys is 95; if older, by one to six years, 104; by six to eleven years, 127; by eleven to sixteen, 147; and by sixteen upwards, 163.*

A section is devoted by Mr. Walker to the circumstances modifying the laws of resemblance, on the minutiæ of which we cannot at present dwell.   We may, however, notice his explanation of the resemblance often noticed between children and more distant relatives, when none can be detected with their parents.

"The resemblance of a child to its grandfather or grandmother, or to its uncle or aunt, has in it nothing mysterious; but depends upon one of its parents introducing a tendency to some feature, a thicker or thinner lip, a longer or shorter nose, a darker or lighter eye, which was lost in the parent more immediately connected with those relatives, and which, now again introduced, calls into action modifications of form and function which in that parent were at least rendered subordinate, and consequently obscure by other and more dominating ones." (p. 271.)

Upon the foregoing principles our author also explains, and we think very satisfactorily, the tendency of domesticated races to return to the original specific form, which gave rise to all the varieties.   This has been

* Quetelet sur l'Homme ; tom. i. p. 53.

especially noticed where the animals have entirely escaped from the influence of man; and they are seen not only to reassume their original form but the instincts peculiar to the wild state, which had in their ancestors given way to the instructions of man.   The wild dogs of Cuba and the horses of South America are thus circumstanced.

The Fifth and Sixth Parts of Mr. Walker's work relate to the breeding of animals in accordance with the laws already discussed; the Seventh details the vague methods hitherto employed to affect progeny among mankind.   From these, we shall here quote several curious facts which we think are of importance to medical men in a practical point of view; and, in doing so, we shall, for the time, leave the peculiar views of Mr. Walker out of the question.   Many of these were observed by the late Mr. Knight, whose sagacity and experience, as we have already taken occasion to observe, render his statements particularly valuable.

All breeders of animals acknowledge that their beauty and strength much depend on their being well fed when young.   If this is the case with animals, it is a fair inference that the young of man are not exceptions; and we think experience proves that a full supply of nutritive food conduces much to the future size and health of the child.

"The Turks (says Osmer, as quoted by Mr. Walker,) choose these Arabian horses when young, because, if continued long in the hands of the Arabs, they are *small, stunted,* and *deformed* in shape; whereas, when brought into Turkey, a land of greater plenty than the deserts of Arabia, they acquire a greater perfection both of size and shape.   Shall we wonder that his offspring, produced in England, a land of plenty, of whom the greatest care is taken, who is defended from the extremity of heat and cold, whose food is never limited, and whose vessels are filled with the juices of the sweetest herbage—shall we wonder, I say, that his offspring, so brought up, should acquire a more perfect shape and size than his progenitor?" (p. 323.)

The effects of over-stimulating animals are singularly like those arising from the similar treatment of men.   The blood-horse is in much the same condition as many of the more self-indulgent among his masters, or (yet more) mistresses.   Their stimulating and high feeding, hot rooms, hot clothing, insufficient exercise and constant endeavours to ward off every cause which would tend to blunt their bodily or mental sensibilities, all increase to a morbid extent their sensitiveness; and, although they often give them the power for a short time of undergoing great fatigue in the pursuit of pleasure, diminish their capacity of enduring any long-continued exertion either of mind or of body, or, at least, if they are called upon to continued exertion, to bring about their early decay.   It is said of Pitt that he was advised medically, in order to prevent hereditary gout, to drink a pint of wine daily even before he went to college, and that his daily allowance even as a young man was two bottles!   Pitt must have worked prodigiously hard whilst he lived, but he died at little more than forty.   Such men are in much the condition of blood-horses; but many females in the same rank and even in much lower ranks, are even in a more pitiable condition, as they are subject to the same stimulus without the attendant exertion of mind and body, and suffer in consequence all the manifold evils of " idleness and fulness of bread."

"What enormous expense (says Mr. Knight) has been employed in improving the blood-horse in this country : yet the blood-horse is most certainly a much feebler animal in respect to power of carrying weight, or of sustaining the fatigue of a long race, or any race if the ground be soft and wet, than it was fifty years ago.   The

breeders have destroyed the constitutional powers of the breed of the animal by excess of stimulation, in over-feeding the young animals through successive generations, and they have looked to the legs of the animal for speed, instead of the constitutional power which gives motion to his legs." (p. 329.)

What can convey a stronger lesson to indolent people than the following fact, quoted by Mr. Walker?

" Mr. Thacker observes, that if a stallion be prevented even by accidental lameness from obtaining exercise, he is sure to be deficient in muscular powers, and to convey that deficiency to his offspring. I knew a horse who broke his leg in running a race when three years old, and who has since been kept for covering mares, not being capable of anything else, or even of travelling for that, but his stock are not promising, though he is exceedingly well bred." (p. 330.)

The probability of the children of highly-fed parents requiring more nutritious food than others whose progenitors have lived on simpler fare, as is shown (by the following observations of Mr. Knight's) to be the case with animals, was brought to our mind by the recollection of an attempt made by a lady of high rank to regulate the diet of her children by the simple fare of the healthy neighbouring cottagers. The consequence was the production of strumous ophthalmia in one fine boy, and in several others various low forms of inflammation.

" Mr. Knight observes, ' The improvers, as they are called, of the Durham cattle, feed very highly; their young animals are kept in a fattened state from their birth; and they have brought to market more perfect animals, at an early age, than any other. But every breed of animals which has, through a few generations (two or three is sufficient), been overfed requires similar feeding; and the extraordinary animals which the Durham breeders have sent to Smithfield have come there, I am sure, deeply insolvent; in other words, they have not nearly repaid the expense of feeding them. The offspring of such animals require and can digest more food than others who have lived upon little.'" (p. 332.) . . . " The children of parents who have, through many generations, been well fed would perish if given no more food than would be sufficient for an Irish or Highland Scots peasant child." (p. 333.)

We are inclined to agree with Mr. Knight that excess of application to acquire accomplishments, and we would add sedentary habits of all sorts, tend to produce the defects he mentions. Certainly the number of young women who are unable to suckle their own children from a deficient secretion of milk is in the present day very large, and if the opinion of most observers can be relied on, it is much larger than it was half a century ago. The probable deterioration of form by such habits would be, with many mothers, a strong argument to convince them of their impropriety.

" I am afraid (says Mr. Knight) that some of the defects of the French women are to be found amongst the superior classes particularly, in this country. The girls are generally much more " flat-busted" than they were sixty years ago. I now see them with different feelings; but I can see forms with the same eyes; and several observant women have noticed the change. Look at the pictures of women a century or a century and a half ago, and the bosoms of the women there represented are not similar to those of modern times. Excess of application to acquire accomplishments, and particularly music, has, I suspect, operated injuriously; and I do not think that such stimulants as tea and coffee have been beneficial." (p. 336.)

There is a popular opinion that fat wet nurses have less milk than those whose bodies are thinner, and cattle breeders agree with it.

" The constitutional disposition to form fat (says Mr. Knight) is certainly hostile

to the disposition to give milk. Cows which give little milk often present large udders, which contain much solid matter; and, to inexperienced eyes, a two years old Hereford cow would give a promise of much milk where very little would be given." (p. 338.)

The following remarks on fat, by Mr. Walker, are worthy the attention of the physiologist. They are corroborated in some measure by another fact, that nervous patients are generally thin.

" Fat appears to be the means which nature very extensively employs to lower sensibility by interposition between the skin and the central parts of the nervous system. Fat women, and other animals, accordingly, have not only less sensibility and irritability of the skin, but of the organs of sense generally, eyes usually blue, soft, languid, not brilliant, penetrating, &c. Thinner animals, on the contrary, are more generally those of the south, and have more acute sensibility, and, among women, more brilliant eyes, and large mammæ, themselves organs of exquisite sensation." (p. 338.) . . . . "When sheep feed upon luxuriant plains, where little muscular exertion is required, a great accumulation of fat takes place. When, on the contrary, they feed upon the scanty herbage of mountains, where great and incessant muscular exertion is requisite, fattening becomes impossible, and sensibility, which would otherwise be unprotected, obtains an exterior covering of the finest wool." (p. 346.)

We shall conclude these miscellaneous quotations, by extracting a few curious facts relative to the transmission to the offspring of the peculiar habits of the parent. In a voyage up the Missouri, by Clarke and Lewis, one of the company was the son of an Indian woman who had married a Frenchman; and this half Indian acquired the power of tracing animals through the trackless wood to any extent—which his companions could not acquire. The whelps of well-trained dogs are, almost at birth, more fitted for sporting purposes than others. Mr. Knight says that an old schoolmaster told him that he had observed a remarkable difference in the capacities of children for learning, which was connected with the education and aptitudes of their parents; that the children of people accustomed to arithmetic learned figures quicker than those of differently educated persons, while the children of classic scholars more easily learned Latin and Greek; and that, notwithstanding a few striking exceptions, the natural dulness of children born of uneducated persons was proverbial.

" Seventy years ago (says Mr. K.) I heard an old schoolmaster remark, in speaking of my late brother's (Payne Knight) great facility of learning languages, that in fifty years' experience, he had never seen a child of wholly illiterate parentage and ancestry, (such being at that time very abundant) who could learn languages, meaning of course Latin and Greek. Being with a friend, about thirty years ago, shooting grouse upon a Welsh mountain, we were joined by a native of the country, who exhibited, with the manners and character of a buffoon, very great powers of combining ideas, and who possessed a good deal of a kind of irregular and uninstructed wit. I pointed out to my friend the difference between him and the other peasants, and observed that, on enquiry, he would prove to be the son of an educated male parent. It proved, upon enquiring, that he was a gentleman's bastard. Being in my parish church, about ten years ago, a little girl, in repeating her catechism got through her part in less than half the time that her companions did, and without missing or hesitating about a single word. She was wholly unknown to me; but I whispered to Mrs. Knight, 'That girl is a gentleman's natural daughter,' and so she proved to be." (p. 177.)

We give these instances, as they are related in the late Mr. Knight's authority. In reference to the children of ignorant parents being inca-

pable of attaining languages, it must, however, be remembered that in their case all early culture has been probably denied them; and those who know (and who does not?) the importance of an educated mother's early care to the future intellect of the child, will doubt whether these instances are as conclusive as they at first appear.   We think, nevertheless, their importance in reference to the question at issue, is considerable, when they are viewed in connexion with such facts as those of well-bred dogs producing young more fitted for sporting purposes than others; as well as with such instances as Mr. Knight gives of the bastards of gentlemen, who have had no early care of an educated mother, proving more intellectual than their legitimate companions.

The Eighth Part of Mr. Walker's Treatise is the winding-up or application of the whole subject, giving directions for " Choice in Intermarriage as prescribed by the natural laws and their modifications." Into the details of this our limits forbid us to enter; and we should do injustice to the very ingenious author were we to satisfy the curiosity of all our readers by giving a full abstract.   Here, as elsewhere, however, we must complain of the quantity of extraneous matter introduced. With the following general considerations we shall conclude our extracts.

" Certain it is that families, by intermarriages founded on rational principles, and in conformity with the natural laws so clearly established, as prevailing equally among men and lower animals, may, surely, easily, and quickly (some in their first, others in their second generation) raise themselves, in some at least of their members, from deformity to beautiful organization, from disease to health, and from stupidity to high mental ability.   Moreover, if the importance of judicious crossing were seen, among the variously organized tribes composing a nation like the British, these benefits, in moderate degree, would be proportionally extended among the mass of the people." (p. 283.) . . . " It can, indeed, be only passion, venality, or pride, that can prevent man from doing for his own progeny, that which natural and universal laws permit him to do for the progeny of every domesticated animal.   The only reply that, under these circumstances of actual or daily demonstration, he can make to the invitation of nature and of science is, that he prefers a blind passion to an enlightened one; brutal indulgence, succeeded by life-long disgust, to exquisite enjoyment and permanent happiness; or money, a mere means of pleasure, at the cost of domestic misery—perhaps of conjugal or filial insanity, to actual pleasure for himself and all around him, as well as the progress of children in intellectual improvement and honorable arts—the sole means of abiding fortune; or rank from which he may look up to those above, who despise and spit upon him because he would vainly overtake them in their idiot struggle for a bubble, and down on those below, who therefore naturally hate him for his insolent assumption.

" To those of higher aspirations than these—to those who seek for the improvement of their race, and for mental advancement both in themselves and their progeny, it cannot be wrong in passing to say that the other functions will diminish in energy as the cerebral functions become more intense.   Hence men of the highest intelligence are more liable than others to cerebral affections.   There are, therefore, prudent limits even to the best employment of the mind." (p. 285.)

There are few, we imagine, who will not in part coincide with these views; and fewer still, we should think, who would entirely unite in them.   Mr. Walker seems to have left out of his calculation that there is in the human species such a thing as love, an emotion of the mind quite distinct from the instinctive propensity which man possesses in common with the lower animals, and at the same time completely involun-

tary. Now, we can imagine it very possible that just as the most ardent
affection may exist between two individuals, whose union a wise-judging
physiologist would oppose from the fear of consequences to the offspring
or to the parents themselves, so it may be completely absent where that
which a *breeder* would regard as the most advantageous contrast existed
between them, even though the will excited by reason and judgment
might not be wanting on either side. Will Mr. Walker tell us, after
enlarging as he has done on the necessity of ardent emotion for the
vigour of the offspring, that this will arise merely from that harmony
which may exist between the forms of the pair which is most conducive
to beauty in the progeny?

We think that our readers will perceive that Mr. Walker has in this
volume made a valuable contribution to a most interesting and important
department of physiology, by the collection, from authentic sources, of
a mass of facts sufficient to afford a glimpse of general laws, if not to
serve for their establishment.   It would be absurd for us or any one else
to pronounce a definite opinion on the truth of these laws, without putting
them to the test of extensive observation; but, we must say, that we
think the evidence adduced in support of them is sufficiently strong to
make us desire to see them put to this trial.   We must forewarn those,
however, who wish to engage in the pursuit, that they must make them-
selves well acquainted with the sources of modification which Mr. Walker
has pointed out, by the attentive study of his book; and if they gain
nothing else from its perusal, they will have the advantage of a valuable
collection of facts which may avail much in future enquiries, as well as
of being put on the right track for their acquirement.   Physiologists
have, in too many instances, pursued their enquiries into the laws of
nature under the guidance of some preconceived notions which are as
likely to lead them wrong as right, and which at any rate narrow the
boundaries of their investigation.   In one or two points we have been
obliged to regard Mr. Walker as prejudiced by his peculiar theories; but
in the general range of his researches he has given an example which
may justly be imitated by others, deriving information bearing on the
subject from whatever source it has been offered to him.   In this point
of view, therefore, his work is of much value to the scientific physiologist;
and we cannot but believe that a body of materials might easily be col-
lected from the sources he has indicated, sufficient for the deduction of
general principles of unquestionable supremacy.   We quite agree with
Dr. Birkbeck in thinking that we are much more likely to arrive at " a
definite and tangible result" as to the " effect contributed by each sex
in the appointed work of reproduction," by " a comparison of the entire
and enlarged being with its producers," than by profound researches into
" the intricacies of the ovaria, uterus, or seminal fluid."   Although we
are far from wishing to depreciate these last, the questions we have been
considering certainly appear to us beyond their power to resolve.

1. *Autoplastie, ou Restauration des parties du corps qui ont été détruites,
   à la faveur d'un emprunt fait à d'autres parties plus ou moins éloi-
   gnées.* Par PH. FRÉD. BLANDIN, Chirurgien de l'Hôpital Beaujon,
   &c.—*Paris*, 1836.
   *Autoplastic Surgery, or the Restoration of parts of the Body which have
   been destroyed, by borrowing from other parts more or less distant.*
   By P. F. BLANDIN.—*Paris*, 1836. 8vo. pp. 266.

2. *Handbuch der plastischen Chirurgie.* Von EDWARD ZEIS, Doctor der
   Medicin und Chirurgie, praktischem Arzte zu Dresden, &c.—*Berlin.*
   1838.
   Manual of Plastic Surgery. By Dr. EDWARD ZEIS, of Dresden.—*Ber-
   lin*, 1838. 8vo. pp. 576.

3. *Chirurgische Erfahrungen, besonders über die Wiederherstellung
   zerstörter Theile des menschlichen Körpers nach neuen Methoden.*
   Von J. F. DIEFFENBACH.—*Berlin*, 1829, 1830, 1834. IV. Abtheilun-
   gen. 8vo. und 4to.
   *Chirurgical Essays, more particularly on the Restoration of lost Parts
   by new methods.* By J. F. DIEFFENBACH.—*Berlin*, 1829-1834.
   Four Parts. 8vo. and 4to.

4. *Practical Surgery; with one hundred and thirty Engravings on wood.*
   By ROBERT LISTON. *Second Edition.*—*London*, 1838. 8vo. pp. 529.
   (Chap VIII. *Restoration of lost Parts.*)

THE subject of the works before us is one which, although it can
boast of an origin by no means recent, is yet comparatively new amongst
us; and of this we need no more convincing proof than the fact, that
the first two volumes on our list are the only works, in this age of book-
making, which profess to treat of plastic surgery as a whole. It would
be as difficult to find, as it is unprofitable to seek, a cause for the pro-
tracted slumber of this useful branch of the healing art, uninterrupted
as it has been, save by the efforts of the Professor of Bologna and his
immediate successors. Perhaps it is less difficult to assign a reason for
its resuscitation with such renewed vigour in our own times. The rapid
strides which surgery in general has lately made, and the degree of
perfection to which the operative department in particular has been
brought by the combined talent and boldness of modern surgeons,
would naturally tend to the cultivation of every means of reparation,
now that we appear to have learnt the extent to which we may carry the
various forms of mutilation. It is not, then, so much with the object
of entering into a critical examination of their contents that we have
selected the works whose titles head this page, as to aim at presenting
our readers with a concise view of the present state of plastic surgery in
France, Germany, and England.

As the work of Dieffenbach touches only on parts of the general
subject, and as Mr. Liston's treatise contains merely a single, short
chapter, devoted to its consideration, we shall, in the following pages,
only refer to them incidentally, taking as our guide the other authors,

and especially Dr. Zeis, whose work, as might be anticipated, is considerably more copious than that of his French competitor. We shall examine the subject in both its general and special bearings; devoting to the latter division sufficient space to give a concise view of all the principal information supplied by our authors, and introducing a comparison between the practice of the three countries represented by them, whenever peculiarities or differences of opinion or practice seem to render this desirable. In general we shall abstain from criticism, and only interpose such remarks of our own as naturally suggest themselves under the practical point of view in which it is our especial object to regard the subject.

M. Blandin divides the main body of his treatise into six parts, as follows: 1. The sphere of application of plastic surgery. 2. The different forms of the same. 3. The modes of operation. 4. Requisite treatment after the operation. 5. Consequences of the operation. 6. The importance to be attached to the art. A general summary concludes the volume.

The work of Dr. Zeis is thrown into two grand divisions, in which the *general* and *special* parts of the subject are severally treated of. The first division is subdivided into ten sections: of these, one chapter is devoted to "the union of parts which have suffered complete separation from the body;" this is succeeded by a history of the Italian method of restoring lost structures, together with the modification introduced by Gräfe, termed by him "the German method;" then the Indian rhinoplastic operation is described; a separate chapter is next given to "the indications for plastic operations," which is followed by the consideration of the physiological and pathological conditions of transplanted parts, and the treatment, both surgical and medical, of patients: lastly, a section is devoted to general instructions respecting the operations; and this completes the first division of the work, which consists of about two hundred pages.

The second division is occupied with the various *special forms* of plastic surgery, and is comprised in nineteen chapters.

Dr. Zeis defines plastic surgery to be "that branch of operative surgery which has for its object the restoration of organized structures which have been destroyed;" and thus it is that, by art, the surgeon endeavours to imitate that which is the work of nature in the less complex of organized structures, and amongst the more simply organized beings. The amount of reproductive power appears, indeed, to bear an inverse proportion to the complexity of organization; or, to use the words of Zeis, "as the power of reproduction amongst the lower animals is more perfect than in the higher, so is the same law illustrated in different textures of the same individual; and the more complete and complicated an organ is, the more limited the reproductive power it possesses. Thus, in man, a hair or nail readily grows again so long as the root is unimpaired, but skin is replaced by a cicatrix which differs from the original structure; and severed muscle is united only by ligament. As we ascend to the more complex organs, we do not find that an eye, or a tooth, or a finger-joint are reproduced, as the claws or feet of a crab, when torn away, grow again."

Various terms have been applied to this branch of the healing art; a

fact which Dr. Zeis does not fail to comment upon. We agree with him in opinion, that the nomenclature thus adopted by some authors is at once perplexing and useless, and even sometimes erroneous; as where the words "urethro-plastic" and "cysto-plastic" are employed to denote the simple operation for the healing of fistulous openings in the urethra and bladder. The addition of the adjunct *auto* (αυτός, *self*,) to the word plastic (a compound adopted by Blandin to signify that the new material was not derived from a foreign source, and intended as the antithesis of *Heteroplastic*), is vague and liable to misconstruction, as implying an innate power of reproduction. We are, therefore, willing to confine ourselves, with our German author, to the use of the simple expression "Plastic surgery,"* which is sufficient to imply generically all we mean: to such specific terms as do not convey an erroneous impression there can be no objection; of this class are *Rhinoplastic, Blepharoplastic,* &c.

It is well known to most of our readers that plastic surgery had India for its birth-place, where it was nursed by the care of certain low-caste priests, who derived their origin from the Brahmins, and upon whom the duties connected with the mysteries of astrology, instructing in military exercises, physic, &c. devolved; the subject of their operations being such unhappy criminals as had forfeited their noses to the outraged laws of their country. Whether the rhinoplastic operation spread thence over Asia, and whether the art of restoring lost parts of the body was known in Egypt, Greece, or Rome, seems difficult to decide. Galen, indeed, notices that the Egyptian priests knew how to make noses, but that they kept their mode of proceeding secret. Be that, however, as it may, Tagliacozzi or Taliacotius, (by which latinized name he is better known,) who was a native of Bologna, and was subsequently made professor of medicine and surgery at that University, became famous, in the latter part of the sixteenth century, for his success in the restoration of noses; a notoriety which was enhanced by the publication of his extensive and very learned dissertation, entitled *De chirurgia Curtorum per Insitionem.* This work was first published at Venice in 1597, and furnishes us with a curious specimen of the medical literature of that period; as it afforded its author an opportunity of exhibiting his widely diffused and varied information. We next find Cortesi, one of his pupils and professor of surgery in Messina, noticing the subject, and giving an account of a somewhat modified form of operation, in 1625:† and Hildanus relates how Griffon, a surgeon of Lausanne, restored the nose of a damsel cast by the chances of war into the hands of ruthless soldiers, who attempted to violate her: she, however, nobly resolved to sacrifice her beauty at the shrine of virtue, and actually cut off her own nose, (sure means, as our author observes, of cooling the lustful ardour of the assaulters.) In this instance the success was so complete, that the new nose was scarcely distinguishable as such, and the lady afterwards married. Molinetti, of Venice, likewise operated successfully in 1625. After this a long interval succeeded, in which plastic surgery made no progress: " silver and wooden

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* Χειρουργία πλαςτική (from πλασσω, to mould, to model in clay)—*Chirurgia plastica*, Plastic or Modelling surgery.
† Miscellaneorum medicinalium decades denæ. *Messinæ,* 1625. Fol.

noses became fashionable, as being deemed more convenient, and no one appeared disposed to follow the example of Taliacotius: thus exaggeration soon converted that which had lost its repute, into fable." (*Zeis*, p. 19.)

Taliacotius held it impractible to manufacture noses from the skins of other people, nor do we appear to possess any authentic accounts of such operation having been attempted.   We, however, find the Italian professor setting forth the difficulties to be encountered in trying this vicarious form of operation, termed by Blandin " étéroplastie" for, as he observes, it would be no easy matter to keep two persons so nearly approximated and so perfectly at rest during a sufficiently lengthened period, as to effect the desired result of transplantation. The speculations on the practicability of this form of operation afforded considerable amusement during the interval that plastic surgery was at discount; and thus a ludicrous tale of J. Bapt. van Helmont gained much credence.   He relates that Taliacotius operated for an individual by transplanting skin from the arm of a porter or slave on to the noseless face of his patient: that all went on well for the space of thirteen months, but at the end of that period the borrowed organ gradually lost its temperature, and in a few days became gangrenous : upon enquiry, it was found that at the self-same period the original owner of the nose had died.   This fiction was no doubt the source whence Butler derived his well-known illustration in the first canto of Hudibras, although he chose to give the adscititious organ a local origin different from that assigned by Van Helmont.*

Plastic surgery, then, remained in this unsatisfactory condition until the latter end of the last century.   At this time it would appear, according to the Madras Gazette of 1793, that the rhinoplastic operation was successfully practised upon some unfortunate individuals who had been mutilated after falling into the hands of the Sultan Tippoo.   The operator came many miles for the purpose, and, as we are informed, possessed an hereditary title to the art of nose-making.   A representation of one of his patients, before and after the operation, appeared in the Gentleman's Magazine in 1794.   In 1803, our countryman, Lynn, attempted the operation, but without success; and in 1814, Mr. Carpue had his first successful operation : this was succeeded, in the following year, by another, which likewise terminated favorably; and the history of both these cases was published by Mr. Carpue in 1816.   The cause of mutilation, in the former instance, was the abuse of mercury; in the latter, a sabre wound.   Since that period, plastic surgery has flourished here and abroad ; and, in spite of the claims of our German

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* " Thus learned Taliacotius from
The brawny part of porter's b——
Cut supplemental noses, which
Would last as long as parent br——;
But when the date of Nock was out,
Off dropt the sympathetic snout."

The same facts and alleged facts afforded illustrations to many other satirical and witty poets.   Thus Voltaire,

" Ainsi Talicotius,
Grand Esculape d'Etrurie,
Repara tous les nez perdus
Par une nouvelle industrie."

author for his native country, we do not think that our surgeons have been slothful in doing their part towards forwarding this useful and ornamental part of the healing art.*

The third section of Dr. Zeis's volume is occupied with matter rather foreign to the general object of the work, viz. " the reunion of parts which have been totally severed from the parent trunk." Under this head are enumerated the most remarkable cases of separated thumbs, fingers, noses, teeth, &c., being readapted after an interval of even many minutes' isolation. Of the truth of many of these no doubt can exist: indeed, we ourselves have witnessed one instance of this kind in the case of a finger. Next succeeds a description of the various modes of operating for the restoration of lost parts; and of these sections we shall give a short comparative abstract.

Taliacotius limited himself to the furnishing of supplementary noses, ears and lips; and he does not make mention of having attempted any other form of the plastic operation: he appears to have regarded the difficulty of restoring lips as by far the greatest. In renewing ears he did not employ the skin of the arm, but borrowed integument from the neighbouring part of the nape of the neck; thus copying, in this instance, the Indian method, which he never, however, adopted in the rhinoplastic operation. Taliacotius seems to have been fully impressed with the value of the art he practised, and did all in his power to supply its deficiencies: he notices accurately such imperfections as want of form, contraction of the nostrils, &c., and discusses the defects of colour, softness, and absence of sensibility. He further gives very judicious advice respecting the propriety of selecting fit subjects for operation; and strongly insists upon the necessity of deferring to operate in cases where the mutilation has arisen from a specific disease, until all evidence of its further extension shall have been eradicated.

The rhinoplastic operation which Taliacotius practised was somewhat complex, consisting of at least six distinct and independent divisions, viz. 1. The separation of the flap of skin from its *surface* of attachment (to the arm.) 2. The further division of the flap on its third side, so as to leave it only connected by a narrow peduncle to the arm. 3. The adaptation of the flap to its new position, the root of the former nose. 4. The total separation of the flap from the arm. 5. The formation of the nostrils and septum. 6. The attachment of the septum to the upper lip. An interval of some days, or even longer, was permitted to elapse between each of these steps of this tedious operation. The folio Venetian edition of the " Chirurgia Curtorum" is embellished with full-length sketches of individuals whose noses and lips are being reproduced by this "progressive developemental process," as our anatomists of the present day would call it. The left arm was preferred as being least inconvenient to the patient, and that portion of integument covering the inner margin of the biceps in the upper arm, was selected as best suited for the purpose. The requisite length and breadth

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* We would here remark, that the greater bulk of Mr. Carpue's publication is occupied by " historical and physiological notices," matter which both Blandin and Zeis have evidently availed themselves of in their own historical compilations, without a due acknowledgment of the original source. An Account of two successful Operations for restoring a lost Nose. By J. C. Carpue. London, 1816. 4to.

having been, if desirable, previously marked out with ink, a longitudinal incision was made on either side of the intended flap, and the skin was separated from its connexions beneath by means of a bistoury; a bandage of linen being subsequently introduced beneath this bridge of integument to prevent reunion. The parts were then left in this condition, suppuration being promoted as tending to a speedy cicatrization of the under surface of the aforesaid flap; and, about the fourteenth day, when the surrounding margins had contracted and the partially isolated skin had assumed a more solid character, the second operation, which left the flap only connected by a narrow root, was performed. This step admitted of a modification according to the intention of the operator: where the aim was to restore the nose or upper lip, the peduncle was left below; but where the lower lip was the object of operation, the flap was left attached above, or nearer to the axilla.

One remark of the originator of this operation we cannot forbear from quoting, because we deem it well worthy of the observation of modern rhinoplastic operators. " The surgeon (he says) must be prepared for every emergency, and must especially take care that the adscititious parts are rather superfluous than deficient in quantity."* Attention to this point is likewise particularly enforced by Mr. Liston, (Practical Surgery, p. 229,) who appears to have been very successful in his rhinoplastic operations, as we may judge by the sketch of his first case, in which the new organ is represented as being " literally a very passable nose." Closer adherence to this rule would, we are persuaded, save much disappointment in the results of cases, where an insufficient allowance is made for the retraction which necessarily attends the cicatrizing process: and we are disposed to attribute much of the eminent success of Professor Dieffenbach in these cases to a just appreciation of this important point.

Another fortnight having been allowed to elapse, and various preparations, such as having the head and beard shaved, putting on a proper dress, getting the bowels freely moved, &c. having been effected, Taliacotius proceeded to the third step of his process, that of fixing the embryo nose in the position it was in future destined to occupy. This was achieved by means of sutures, and the arm, which had been previously supported by assistants, was now fixed by complicated bandages.† The subsequent separation of the remaining attachment of the flap from its place of growth, with the production and fashioning of the nostrils and septum, occupied the other three operations, which were accomplished at intervals, varying according to circumstances.

From Taliacotius's own account of his operation, we may justly conclude that he was a careful and skilful surgeon. Such likewise appears to have been the opinion of Gräfe, whom we find operating, in 1816, according to his directions.‡ The subject of Gräfe's experiment was a young man, twenty-eight years of age, who had lost all the cartilaginous portion of his nose by a sabre-wound, two years previously: the only

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* " Præstat tamen semper in omnem eventum attentum esse, et ut redundet potius quid quam deficiat providisse."

† Of these and the instruments employed there are likewise various representations in the great work.

‡ Rhinoplastik, oder die Kunst den Verlust der Nase organisch zu ersetzen. Von C. F. von Gräfe. Berlin, 1818. 4to.

variation in this operation from that of the Italian professor was the combination of the last two divisions into one: the case terminated successfully. In the following year (1817) Gräfe adopted an improvement upon the Italian mode of operating, to which he gave the title of the "German method." This modification consisted in simply dividing the operation into two parts; the first comprising the separation of the required integument from the arm, except at one point, and its attachment to the face: by the second operation the process was completed. He further improved upon the confining bandages of Taliacotius, and also called in the aid of other mechanical means, such as compression, &c., in shaping the new organ and dilating the nostrils. His first essay of this sort was made on a girl who had lost her nose, when young, by malignant ulceration, (*Op. cit.* p. 174:) in six days the arm was liberated, and on the fourteenth the operation was completed. This material abridgment of the Italian operation was clearly of considerable importance as regarded the comfort of the patient, as well as the probability of ultimate success; but both have yielded to the more popular Indian operation, which we now proceed briefly to notice.

By the Indian method is understood that form of rhinoplastic operation in which the nose was derived from the forehead, in contra-distinction to the Italian fashion, by which the integument required was translated from a distance. It is true that Taliacotius constructed ears from the neighbouring skin of the head or neck, without possessing any knowledge of the Indian mode of proceeding; but he does not seem to have contemplated the practicability of forming a nose from the skin of the forehead. It would appear, according to the account of the operation performed at Poonah, which we have already alluded to, that the following was the course pursued: The line of incision having been marked out by the aid of a flattened wax model, the skin was divided in its circumference, so as to leave but a single isthmus of attachment between the eyebrows; the root of the nose and upper lip were next prepared by the requisite incisions, and the skin, being then raised from the forehead, was, by a half-twist, adapted to its new position; sutures were dispensed with, and the new relation maintained by dressings. The patient was thus kept in the recumbent posture for about five or six days; and on the tenth a plug of soft lint was passed in, to support the nose, and keep the external aperture free. It does not appear, however, that there was any septum: one single outlet, therefore, existed, in place of nostrils. (See Carpue's cases, p. 16.) We are further informed that, in India, they were likewise acquainted with the operation for restoring both ears and lips. The improvements which Mr. Carpue made upon the above method were the following: He *commenced* his operations by making the necessary excisions for the reception of the new flap; he added the septum, and employed sutures in retaining the opposed parts in contact; lastly, he endeavoured, as much as possible, to approximate the margins of the wound of the forehead. Gräfe, in Berlin, was the next to patronize the Indian fashion, and his first case occurred in 1817: the subject was a female, fifty-one years of age, on whom the operation proved successful. His example was followed by Walther, Rust, Chelius, Fricke, Dieffenbach, &c.

In France (singular fact in that land of personal vanity) plastic sur-

gery made slower progress. Thus we find, in 1819, that the rhinoplastic operation was decried, as offering very little compensation for the suffering endured in procuring a new nose of flesh, where one of metal or wood answered the purpose so well.* It appears that M. Thomain, of Aix, was the first to perform the Indian operation in France, which was soon imitated by Dupuytren, Lisfranc, Delpech, Velpeau, Labat, Blandin, &c. In regard to England, it is curious to remark how limited a part Dr. Zeis makes our surgeons play in forwarding the interests of this his favorite art. The only names he mentions as deserving of notice, until very recently, are those of Carpue, Hutchinson, and Davies: whereas, we would venture to assert that there is scarcely a London or provincial hospital surgeon who has not performed various plastic operations of more or less importance. Either these cases (and many have come within the compass of our own observation) have not been deemed of sufficient importance to merit publication, or our author has failed to search, with wonted German assiduity, the English medical journals:—however, our business lies at present with continental surgery; the vindication of our national claims must, therefore, be left to other hands.

That "necessity is the mother of invention" appears to be a reasonable mode of accounting for the fact that India was the birth-place of plastic surgery; for the mutilating punishments to which adulterers, deserters, and various malefactors rendered themselves obnoxious yielded frequent opportunity for the exercise of the art in question. In Europe, disease has done what the cruelty of the law did in India; and syphilis, lupus, scrofula, &c. have made cases whereon to exercise the ingenuity of the plastic operator. The principal part of the seventh section of Dr. Zeis's book is occupied by remarks, connected with this subject, upon the most fitting cases and periods for operations, with the relative advantages derived from various age, temperament, &c. These observations are, for the most part, judicious, although many are so self-evident as scarcely to be needed in a work like the present. "The greatest variety," he observes, "of form which maimed noses present results from injuries, such as cutting, biting, burning, &c.;" but the cases which he deems the least favorable for operation are those in which the loss of structure has been from carcinoma: "indeed," he adds, "we are scarcely warranted in subjecting patients, especially old people, who are labouring under this disease, to a painful operation, which has so little prospect of success." (p. 121.) In this section, likewise, Dr. Zeis enters into a review of the various indications for plastic operations in different parts, preliminary to entering upon the subject in detail. As regards age, he remarks, "the necessity for plastic operations may occur at all periods of life, but less frequently in children than at a maturer age. The tenderness and susceptibility of childhood for the most part contra-indicate the operations in question; and, further, the consideration that a well-proportioned and suitable nose for a child would be misplaced on the face of an adult, would render it preferable to defer the rhinoplastic operation until, in maturer years, the face and head have become more perfectly developed." (p. 137.) In the very aged these operations are not excus-

* See Dict. des Sciences Médicales; art. *Nez.*

able, unless for the purpose of obviating annoyance or suffering. Ery-
sipelas is a justly dreaded source of interference with the success of
plastic surgery; therefore, there ought to be some circumspection used
in selecting for operation individuals who have been subject to this
affection, and extra precaution employed in the after treatment. But
we shall return to this subject anon.

In his observations on the applicability of different portions of the skin
to the purposes of transplantation, Taliacotius divides the common inte-
gument into four sorts: 1, that which is devoid of hair, and of limited
pliability, as in the palmar and plantar regions; 2, that which is acted
on by a superficial muscle, as the scalp of the forehead; 3, that which
has muscle closely and intimately connected to it, as in the face; 4, the
general integument of the trunk and limbs. It was skin of this last
kind only that Taliacotius regarded as suitable for transplantation;
whereas, on the contrary, surgeons of the present day consider the fore-
head to afford the best. Blandin so far differs in opinion from the Italian
operator as to prefer that integument which is more fixed, and beneath
which the cellular membrane is scanty and deficient in laxity: he calcu-
lates that such skin produces the firmest and most consistent flaps, and is
even better pleased to have an aponeurosis which he may raise with the
skin. (p. 97.) In this opinion Dr. Zeis does not altogether concur, but
allows that integument for transplantation cannot be too thick. It is
true that dense skin is less liable to shrink, and retains its form better;
but there are doubtless some cases requiring operation, in which a thin-
ner skin would be the more available. The most important point, how-
ever, gained by substance in these cases is the better prospect of union,
owing to the relatively greater number of the supplying vessels. Of this
fact the usual success of the Indian form of rhinoplastic operation is an
evidence; and it is further remarked by Dr. Zeis, that he always augured
a favorable termination when the scalp of the forehead was thickly stud-
ded with sebaceous follicles, which he considered as indicative of corre-
sponding density and richness in vessels. (p. 153.) He likewise consi-
ders the facial integument as eligible, if requisite; but justly remarks
that the proximity of the eyes, mouth, &c. forbids any extensive removal
of skin from this region. If the scalp behind the ears be employed, it is
recommended to shave the part first, and subsequently, as the hairs pre-
sent themselves, to withdraw them with a pair of tweezers.

The following remarks are interspersed through the succeeding pages
of Dr. Zeis's work. *Contraction* is inevitable to a certain extent, and
in some instances to a very considerable amount, in transplanted flaps:
the increase of thickness is, in these instances, nearly proportioned to
the decrease of surface; an effect which, though often advantageous, by
no means compensates for the accompanying evil: moreover, it is impor-
tant to make allowance for the probable shrinking, in order to aid, as
much as possible, the adhesive process, by avoiding the mechanical im-
pediment of dragging, which would alone be sufficient to offer a material
obstruction to this all-important result. *Loss of temperature*, more or
less, is also a necessary consequence of "peninsulating" a portion of
integument; and this effect is proportioned in intensity to the natural
amount of organization of the flap, and the extent of original connexion
left to it in its new relations. This condition does not, however, com-

monly endure beyond the first hour or two; and it is not unusual to find
the temperature raised on the following day, even above the natural
standard.   The *pallor* which accompanies the reduction of temperature
is attributable to the absence of blood from the vessels.   This state is
often converted, in the course of a few hours, to one of an opposite
nature: the vessels become gorged, and a livid hue supervenes, which is
dependent on the sluggishness of the venous circulation.   Where this
turgidity is very great, mortification is to be dreaded; and Dieffenbach
has, under such circumstances, drawn blood from the flap by the lancet
or by the aid of leeches.*   The recommendation of Blandin to include,
if possible, a considerable artery in the peduncle of transplanted skin is,
therefore, rather short-sighted; inasmuch as nothing would be more likely
to favour the state above described than a large supply of arterial blood,
without ensuring its speedy return.   The French author, however, in-
veighs strongly against the practice recommended by Dieffenbach, and
declares the result of his own experience and observation to be directly
opposed to that of the Berlin professor : he further cites, as coinciding
authorities, Delpech and Serre; the latter of whom ascribes the more
frequent occurrence of gangrene in the Italian operation to the want of
a direct and large supply of arterial blood. (*Blandin*, pp. 97, 105-7.)
These are points of by no means trifling interest to the plastic operator.
Our own observation disposes us to adopt the opinion that mortification
more frequently results from an over-charged state of vessels than from
a want of power to sustain vitality.   It is, of course, of great importance
to distinguish between the lividity resulting from repletion, and that
which is the consequence of a deficient influx of blood; a point which
has been justly commented on by Mr. Liston, (*Practical Surgery*,
p. 229 :) in the latter condition, he observes, "the surface is cold, the
lividity being antecedent to gangrene, and removal of blood would but
hasten destruction of the part."   As union by the first intention is the
most desirable object, it becomes essential that the operator should
direct towards it his chief attention.   For this purpose Dr. Zeis seems to
lay great stress upon the importance of moderating inflammation in the
neighbourhood of the line of incision: he employs cold applications,
which, he observes, are more grateful to the patient; and recommends,
if need be, the adoption of the most active antiphlogistic measures, to
obviate the suppurative process. (pp. 163-4.)   "If, however," he adds
a little further on, "adhesion have taken place only at some points, it
does not signify that the cure be subsequently completed by granulation
and suppuration."   A very annoying event, short of total failure, is par-
tial gangrene: when this occurs in the septum, it is of the least import-
ance, as a fresh one may be procured from the upper lip.   If there be no
appearance of union by the first intention before the third or fourth day,
but in its place general suppuration, then, says Dr. Zeis, we may con-
clude that the operation has been in vain, and that gangrene is inevitable.
After the sixth day, Blandin ascribes gangrene to inflammation : it is
then, he remarks, of a moist character. (*Blandin*, pp. 210-11.)

  The phenomena connected with the *sensibility* of a raised flap of skin
are such as might be anticipated.   The subject of the operation is per-

* Chir. Erfahr. Abth. ii. p. 72.

fectly aware of the contact even of the finger, (always supposing the case is proceeding favorably;) but, naturally enough, refers the sensation to the original seat of the transplanted integument: thus, in the common rhinoplastic operation, the contact of any body with the new nose is felt in the forehead. Habit, however, corrects this erroneous impression, (if such it may be termed,) and in the course of a few weeks the new organ ceases to require a vicarious performance of this office, and establishes for itself the right of internal recognition, and of communicating directly with the external world. The sensibility is usually more or less perfect in proportion to the extent of the connecting isthmus; yet it has been observed by Gräfe, that in one case of rhinoplastic operation from the forehead, which he witnessed, although there was total annihilation of sensibility, the processes of granulation and cicatrization proceeded, nevertheless, with extreme activity.* At the end of a long case described by him, Blandin remarks that no sensation was experienced in the new nose until the healing process was quite completed; and that then it returned, together with the sense of smell, which had before been quite lost. (*Blandin*, p. 134.) In speaking of *erysipelas*, Dr. Zeis remarks, "this disease is of frequent occurrence after plastic operations, especially of the face. The general nature of the operation, the presence of sutures, &c., aid in producing, the day following the operation, an inflammatory condition, which sometimes merely resembles, but more often really is, erysipelas. Where any predisposition to this disease exists, general precautionary measures must be attended to; as, in correcting secretion, if irregular, keeping the bowels free," &c. The propriety of avoiding the operation at a period when this epidemic is prevalent, as is sometimes the case in the wards of our hospitals, is too self-evident to be insisted on.

It so happens occasionally that it is requisite to transpose the relation of skin and mucous membrane; as in turning up a septum nasi from the upper lip: it is interesting to observe, in such cases, how readily the latter adapts itself to its new and exposed position: it rapidly assumes, as is known to every surgeon, the character and function of common integument; indeed, the converse will occur, although less perfectly. The anatomical examination of parts which have been subjected to operation has not presented anything worthy of remark: the skin had lost none of its healthy characteristics, and the cicatrix was like other cicatrices. In a case examined by Gräfe, the supplying vessels from all sides were, as might be anticipated, much enlarged.

The *surgical* and *medical treatment* of his patients forms the ninth section of Dr. Zeis's work. It contains no peculiar views: we shall, therefore, pass it by with one or two quotations. In regard to *diet*, Taliacotius required his patients to live abstemiously on the first day, but generously during the rest of the week: he, however, recommends that the process of mastication should be avoided, as interfering mechanically with the adhesive process. Occasionally, spongy and coarse granulations will spring up, threatening to burst the sutures: in such case, the same author recommends the use of astringent washes and ointments. Pain in the scapular region was, with him, a frequent source

* Gräfe und Walther's Journal, Band xii. p. 11.

of troublesome complaint : this, however, arose solely from the awkward and constrained position of the arm. When the inflammation has exceeded the healthy (or, more properly speaking, desirable) bounds, Gräfe says the most vigorous antiphlogistic measures, general and topical, must be employed, if requisite. He notices erythematous inflammation as very troublesome and painful. Stimulating applications, such as aromatic and spirituous fomentations, have been occasionally used to aid the circulation ; but Dr. Zeis has never seen any case in which their employment was needed. With respect to the ordinary dressings to be applied after the completion of an operation, we fully coincide with Mr. Liston in the opinion that they cannot be too simple. A piece of lint, dipped in warm water, and a strip of oil-skin to preserve its moisture, is all that is needed, and very preferable to salves and plaster; the displacement and renewal of which may seriously interfere with, or even destroy, the tender adhesion of newly-adapted surfaces.* The medical treatment in these cases is, as a matter of course, analogous to that of patients who have submitted to other surgical operations.

The tenth section (a long one) treats of the *general forms of operation*. From this also we shall cull short passages here and there, previous to introducing our readers to the special operative division of the work. Dr. Zeis remarks, that " reparation may be effected by completely or partially separated flaps of skin ;" and, again, a second division is said to be that " in which transplanted integument, without perfect separation, is derived from a foreign source or from the same individual." The doctor admits that the former of these operations has only existed in the imagination ; and that, in spite of the authority of Van Helmont and Butler, flesh will most readily take fresh root where it is indigenous. In the latter operation, the required skin "may be derived from a contiguous or distant site ;" and it may be desirable that such flap, when removed to its new position, should " adhere either by its whole surface or by its margin only :" for the cure of fistula the former is needed ; the rhinoplastic operation is an instance of the latter. The after-section of the peduncle is a modification due to Dieffenbach, but deprecated by the French authorities, Blandin and Labat. (*Autoplastie*, p. 124 ; and again, p. 172.) This difference of opinion gives occasion to Dr. Zeis to make some rather amusing strictures upon the former writer ; in which he censures him for claiming, in the names of Lisfranc and Lallemand, the merit of improvements which justly (as we likewise believe) belongs to Dieffenbach. Indeed, it is not difficult to discover that our German author holds in no small contempt the opinions of his French contemporaries, at any rate on the subject of plastic surgery. The plan which Dieffenbach has adopted consists in causing the section on one side of his flap to be continuous with the excision for the reception of it. Thus, though in the original operation it signified not whether the flap was perpendicular or oblique to the long axis of the face, it is of importance in the above improved operation. The latter is preferable, as by its means the dragging in making the turn is slighter, reducing the 180 degrees of a circle

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* We were never more fully impressed with the advantages of extreme simplicity of surgical dressings, than when attending the practice of Laugenbeck, the talented professor of Gottingen.—Rev.

to 140. A simpler operation, in which no twisting of the integument occurs, may be performed for the closing of fistulous openings, &c.; but, for this, skin must be sufficiently loose in its connexions; an incision must be made on three sides of a flap, which, being raised, is drawn forward, and adapted over the aperture to be closed.

Cases occasionally occur in which, as a consequence of destruction of the nasal bones and cartilages, the tegumentary covering of the nose sinks for want of support, without itself having suffered any injury. This condition Dieffenbach has proposed to remedy in the following manner: The nose must be divided into several—say three—flaps, of which, in such case, the central would be that covering the dorsum of the nose; slices are then removed from each interval, but of such a form that there shall be scarcely any loss superficially: thus, the principle is analogous to the formation of an arch by a series of wedges. An operation of an opposite character may likewise be required by loss of structure; viz. the insertion of a new portion from a neighbouring part which can better spare it. If the surface have been destroyed by disease, without injury to the soft parts beneath, then Dieffenbach recommends that a new coating should be borrowed from the forehead; and, again, the reverse condition (the deficiency of bone and cartilage) may also be benefited by the transplantation of a portion of skin from the same source: the object of this latter operation requires, however, a little explanation. The transplanted portion of scalp is laid between the separated nasal integument, and there allowed to fix itself, although it is ultimately destined to form the new bridge to the dilapidated organ. This object is effected by means of dissecting out, at several times, the surface of the transplanted skin, and by approximating the edges of the original tegument: thus is the deeper or cellular portion of the new structure allowed to recede, and form a vicarious support to the depressed nose. (*Erfahrungen*, Bd. ii. iii.) A similar operation is recommended by Mr. Liston. This surgeon employs one of two methods, according to circumstances; " either shaving off the surface of the depressed portion, or by establishing a sulcus in its centre, raising the integument a little on each side, and then inserting and permanently retaining a central portion brought from the forehead, sufficient to raise the part to its proper level." (*Practical Surgery*, p. 233.) This operation is thus completed at once. In the former case, where the nose has simply sunk from loss of its natural support, the same surgeon deprecates Prof. Dieffenbach's operation, and asserts that the proper treatment of these cases consists in " dividing any abnormal adhesions, and carefully stuffing the nose so as to retain the integument in a proper shape, until its disposition to fall is in part overcome, and firmness and stability are obtained. A septum may subsequently be formed, and the stuffing renewed until the cure is complete. (*Ib.* p. 234.)

In connexion with the above forms of disease, we may notice urethral and vesico-vaginal fistulous openings, for which Dieffenbach has successfully practised the application of the following form of suture: A curved needle, being armed with a strong ligature, is passed, stitchwise, around the opening to be closed: i. e. the skin or mucous membrane, as it may be, is exposed and treated as we should treat a common form of bag, to which we desired to apply a running string. The suture is passed

in and out, its extremity terminating where it commenced; the ends are then knotted together, and the surrounding loose integument is puckered up, so as to close the fistula by tightening the suture; and this can of course be regulated or repeated at pleasure, as long as the thread holds together. The plaiting of the skin becomes permanent, and thus the cure is effected.
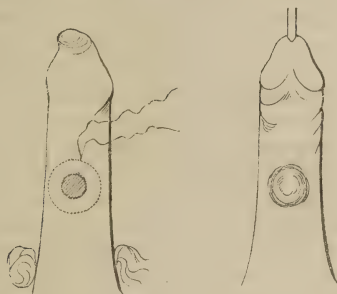
The accompanying woodcut, representing the application of this suture for the cure of urethral fistula, will convey the best idea of its mode of employment. The internal circle represents the pared margin of the fistulous aperture; whilst the external dotted circle indicates the stitching course of the suture: the extremities of the thread must be left sufficiently long and free to admit of their being tied with facility.*

It behoves us now to say a few words respecting *sutures* generally. The primary adhesion of newly adapted parts is, of course, mainly dependent upon the accuracy and sufficiency of the means employed for keeping them in contact. This result may be accomplished, as we have already had occasion to notice, without sutures: such was the Indian practice. Taliacotius employed the simple knotted suture. Mr. Carpue, in his operations, used the same form; applying five sutures, one being for the septum. Gräfe recommended the employment of small bars of ivory or boxwood, which were to be laid, with a slightly convex surface, upon the edges of the wounds, and presenting a plane surface for the sutures to be applied over. But the winding or twisted suture of Dieffenbach appears, according to Dr. Zeis, to have the preference given to it above every other in Germany. It is similar to that which we employ likewise in England; the method of application consisting in passing a series of needles through the skin, (its whole thickness, says Dieffenbach,) about one or two lines distant from the incised margins on either side: thick, unwaxed, woollen ligatures are then wound, in a circular or figure-of-eight form, round these, and subsequently secured firmly by a knot: the extremities of the needles are lastly cut off. Our French and German authors are here again at issue as regards the number of sutures; Zeis thinking, with Dieffenbach, that there cannot be too many; whereas, Blandin (p. 110) considers five sufficient for the nose, and that, in many plastic operations, they may be dispensed with altogether. Mr. Liston recommends that the needles be cautiously with-

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* Reference may be made to this cut, in reading the description of the operation it is intended to illustrate, a few pages further on.

drawn on the third day, but "without disturbing the threads or the crust which has been formed about them." (*Ib.* p. 227.)

The second or *special* part of Dr. Zeis's work treats of the particular operations in plastic surgery. The first section of this division is occupied by the *Rhinoplastic* operation* in all its forms, and with all its varieties and modifications in detail. The amount of injury or loss which the nose may sustain from disease depends mainly upon the nature of the malady and the structures attacked. Further, the loss of structure may be the consequence of accident; in which case, likewise, the extent of injury is proportioned to the violence of the blow, or character of the implement by which the hurt is inflicted. We would therefore suggest, as a simple arrangement, to classify the conditions resulting from injury to this organ (for it is with results we have to deal) under three heads: 1. That in which the common integument alone is destroyed; 2, that in which the cartilages have also suffered; 3, that in which the bones are likewise implicated. There may, doubtless, be modifications of each of these conditions; i. e. they may exist independently of one another, or in combination. Where the latter is the case, the resulting condition necessarily is a total annihilation of the organ. We will not, however, anticipate our author, but allow him to speak for himself as we follow him through the somewhat diffuse pages of his work. Pass we on, then, at once to that form of defect, for remedying which surgical aid is most needed, viz. the deficiency of the whole or greater part of the nose.

Dr. Zeis remarks that "the greatest proportion of nasal imperfections which require operation do not belong to this worst form, of which we are now about to treat, but are principally of that class in which the anterior and cartilaginous portions of the nose are wanting; and where parts of the alæ nasi and septum remain, and are in a condition to be turned to useful account in the operation." (p. 266.) We need scarcely add that, where this is the case, the operation requires such modifications as will spare the scalp, as well as produce a better specimen of the operator's handicraft. The method adopted by Dieffenbach is approved of by Dr. Zeis: we shall therefore describe the operation which he recommends as the most desirable where the scalp is thin. He raises from the forehead an oval flap of skin, which has its connecting peduncle on one side of the median line, and adapts it, in the usual way, on or over the remnant of the former nose, confining it by means of the suture already described. The extremity of the flap is next cut up in two places, so as to form the septum in the centre and the alæ laterally; or this may be effected before the application of the sutures. The septum and upper lip are then connected, and the long sloping points of the alæ are turned in, and fixed by pins. "This method," says Dr. Zeis, "is found to present peculiar advantages where the forehead-scalp is thin; as the point of the nose thus gains greatly in strength and capability of resisting contraction, at the same time that the nostrils are prevented from growing together." (p. 270.) Labat has described a similar operation, but with the flaps cut out broader and rounder in front. Where the scalp is dense, Dieffenbach does not consider this operation applicable, because

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* From 'Ριν, ρινὸς, the nose, and πλάσσω, to model; or πλαστικὴ, the art of modelling or making images in clay.

the alæ become too thick : indeed, it is in such case impracticable to turn the flaps in. That the operation succeeds admirably in the hands of Prof. Dieffenbach, when the scalp is not too dense, will be testified by all who have had an opportunity of witnessing his practice. This operation has also been adopted in England; but Mr. Liston prefers procuring the septum, in ordinary cases, from the upper lip; and for this purpose he divides the operation into two parts, the formation of the columna being effected after the body of the nose is united in its new position. (*Practical Surgery*, p. 225.) Having premised that it is useful as a guide to make a paper model of the intended nose, and subsequently to trace its outline on the forehead, Dr. Zeis proceeds to describe the different steps of the operation. This is, however, ushered in by a list of the requisite apparatus; but we will not detain our readers with a detail of the many minutiæ recounted, from the seating of the patient on the operating stool till his return to bed. Suffice it to say that the operation, as described by Dr. Zeis, follows the usual course. After the raising of the flap, and the requisite excision around the site of the former nose are accomplished, our author remarks "that the greatest possible care should be taken to arrest the bleeding; for there need be no hurry about fixing the flap, and it is even of considerable advantage to defer it for some time." (p. 276.) We do not quote these opinions as novel; we are aware, on the contrary, that the recommendation and practice are common, but we much doubt the expediency of the same. Our own observation has induced us to believe that too much importance is attached to the necessity of arresting all appearance of hemorrhage before adapting the fresh cut surfaces; and we feel satisfied that the vitality of the almost isolated flap is temporarily lowered by cold applications, which are commonly had recourse to; and the consequence of a reaction therefrom, tending to secondary oozing of blood or the justly dreaded congestion, is rendered more probable. If we be not mistaken, this opinion is acted upon by many operators, and Dieffenbach amongst the rest; at least, such is our recollection of this able surgeon's practice. In case of hemorrhage from small arteries on the forehead, torsion is recommended as the most ready means of checking it. As to the order in which the sutures are to be applied, Dr. Zeis prefers commencing by attaching the septum to the upper lip; and he is very earnest in urging the propriety of not being too sparing in the application of sutures; for, he adds, " I think it by no means advisable, as many operators do, to be contented with three sutures on either side of the nose ;" and, further on, " should there be at any part space enough left between any two sutures, add even a small needle or a simple suture; for the parts must be accurately adapted, for union by the first intention to result." In this advice we fully coincide. Before dressing the forehead, Prof. Dieffenbach is, we believe, in the habit of applying two or three sutures, to assist a little in approximating the edges. It occasionally occurs that certain soft parts of the nose may be still in existence, although from altered position, resulting from the loss of support, they have ceased to be either serviceable or ornamental. Of such parts Dr. Zeis recommends, very properly, that the surgeon should make use, as an aid in renewing the whole organ; and relates a case of his own, in point, (p. 290,) which was successful.

The advantage of affording mechanical support to the newly-formed nose is discussed; and a case, which was treated by Mr. Tyrrell, of St. Thomas's Hospital, is narrated at length. The support employed in this instance was a temporary bridge of platina, which was subsequently removed, and proved of permanent benefit to the form of the organ. The employment of any permanent extraneous support is justly deprecated by modern authorities. (*Liston*, p. 227.) A series of cases then succeed, which we have not room to insert or treat of at length: but their very titles—while they infallibly suggest the idea of a cobbler's bill—attest the splendid triumphs of modern surgery:—"the reparation of a mutilated nose by the formation of a new bridge," (p. 306;) " the removal of a portion of the nose, for repairing this organ after being crushed," (p. 307;) " the restoration of the alæ nasi and lateral wall of the nose," (pp. 312-14;) " repairing minor imperfections in the alæ nasi," (p. 318;) " raising a depressed nose," (p. 321:) &c. &c.

In connexion with that division of the subject relating to " reparation and restoration of the alæ nasi," we may here notice an operation proposed and performed by Dr. Mütter, of Philadelphia. In his case the right ala had been destroyed by disease, and the septum on the same side was of course exposed. The form of operation resorted to was that described by Blandin, under the head of " Operation par glissement du lambeau." The first incision extended " from a few lines above the superior border of the orifice to a short distance below its inferior, and was directed downwards and outwards; the second commenced at the terminal extremity of the first, and extended horizontally outwards about an inch :" a triangular flap, three lines in thickness, was thus marked out and dissected up. The third incision extended " from the initial extremity of the first to the point of the nose;" a triangular piece of the cicatrix was then removed, and, the flap being brought forward, was fixed by the interrupted suture: a roll of oiled lint was introduced into the new nostril. The inclination of the septum to one side, resulting from after-contraction of the flap, was diminished by "dividing the line of union between the base of the flap and the cheek; and a subsequent semicircular incision in the same position gave the rounded margin of an original ala, care having been taken to prevent reunion of the cut surfaces. This operation possesses the advantage of not requiring torsion of the flap.[*]

Under the head of " Means for amending depressed noses," Dr. Zeis describes an operation (also originating with Dieffenbach) for rectifying a condition which accompanies the double harelip with fissured palate. In these distressing cases the nostrils present an expanded appearance, and the septum is displaced in such a manner as, after the operation for the harelip, to prevent the nose from rising to its proper position. "The division of this fold removes the deformity. For this purpose the head is fixed, and the fleshy septum seized and drawn to one side, until the folded margin of the cartilaginous septum is brought into view; it is then pierced by a small scalpel, and the whole extent of the internal septum slit up, even to its junction with the osseous partition. The point of the nose then rises unaided, but may be still further elevated, if

requisite, by mechanical means." (p. 326.)   This position it is necessary to preserve, in order to prevent reunion in the previous form.   Granulations will complete the cure.

The restoration of the septum may be accomplished from the nose itself or from the upper lip: we shall briefly notice these two forms of operation.   The conditions which Dr. Zeis recognizes as favouring the former are the following: "a nose so large that the removal of a portion of it would tend rather to improve than detract from its beauty; or, further, an upper lip which is low or scarred."   For the purpose of executing this operation, "a slice from the whole thickness of the nose is raised, about an inch in length and four or five lines in breadth, pointed above, and having its connecting pedicle below at the tip of the nose: this is turned and made fast, in its proper position, to the upper lip."   The margins of the interval left are then brought together by suture. (p. 331.)   The
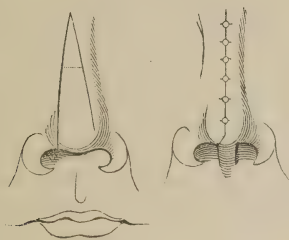
accompanying woodcut represents the sections, and the manner of the subsequent adaptation: the upper extremity of the flap, as low as the transverse line, is sacrificed as useless.

A modification of this has been proposed by Dieffenbach as peculiarly applicable to "turn-up, saddle-backed" noses; viz., instead of twisting the pedicle, the lateral incisions are carried on "to the free margin of the wide-spread nostrils.   The inferior extremity of the flap being then pared in preparation, the whole is liberated, at its sides and upper parts, from the subcutaneous cellular tissue; the most depending portion alone being left, with its original connexions, for the purpose of preserving its vitality.   This is then usually found sufficiently moveable to allow of its being drawn down into the proper connexion with the upper lip; but, if requisite, the cartilaginous portion of the point of the nose and septum must be cut across to a sufficient extent to allow of the required adaptation." (p. 332.)   The rest of this operation is similar to the last described.   The case, however, may be reversed; viz. the nose may not be able to spare a flap, and the upper lip may be even improved (as in strumous subjects) by the abstraction of a portion from its centre: such flap is then connected to the posterior surface of the inferior margin of the nose.   We have seen the appearance remarkably improved in this twofold manner by an operation of this nature.   If preferred, the septum may be simply turned up, as the mucous membrane soon takes on a cuticular character; or the mucous membrane might be left undisturbed if the upper lip were scanty. A further method of performing this operation is by removal of an oblique portion of integument from the upper lip: this, however, leaves an uglier

cicatrix. Apertures in the nose may be closed by simply paring the edges and adapting them, or by a transplanted flap. Dr. Zeis, in conclusion, gives various hints for the after-improvement of newly-formed noses. These it is not essential for us to notice; but we would venture to recommend attention to one point, which might render such emendations occasionally less essential: we allude to the propriety of making the receiving surface for fresh-cut margins sufficiently broad. The scar is thus rendered less perceptible, because the depression is less marked; and, moreover, the probability of ready adhesion is, in a certain degree, proportioned to the extent of surface brought in contact: but the golden rule is, as Dr. Zeis observes, "to keep constantly in view that the longitudinal diameter of the wound should correspond accurately with that of the nose." (p. 345.) In many cases, Dieffenbach has performed the after-operation of removing the cicatrix from the forehead, and re-approximating the edges with sutures. Even a section on each side has been found to succeed, in like manner, when the above dissection has been objected to.

By the *Blepharoplastic* operation* is understood that branch of plastic surgery which has for its object the restoration of lost eyelids. In the older works which treat of plastic surgery, no mention will be found of this particular operation; and it is only since the resuscitation of the art during the last century that it appears to have been practised. Under this head are usually included sundry minor operations for the cure of ectropion, lagophthalmos, &c. The importance of the relief obtained by the successful treatment of these truly serious affections will be sufficient apology for our dwelling a short space on this division of our author's subject.

The blepharoplastic operation presents features of peculiar difficulty to the surgeon, on account of the very complex organization and delicate texture of the structure to be replaced; but, as Dr. Zeis observes, "it is impossible to produce an artificial eyelid from the common integument, which shall possess mucous membrane, muscle, cartilage, glands, ciliæ, cellular tissue, and so forth;" therefore, we must be satisfied to imitate nature as nearly as possible in the form of the protection which it is our object to supply to the tender organ that has been deprived of its natural covering. The first plan which Dr. Zeis notices is that proposed by Dzondi, in his "Contributions towards the Improvement of Medicine," for rectifying that shortened state of the eyelid which results from a contracted cicatrix. It consisted simply in dividing the cicatrix, and allowing it to heal by granulation, so that the broader scar might remedy the defect. The objection to this mode of proceeding is, that, whatever care may be taken during the period of healing, the after-contraction will, as Dr. Zeis observes, in almost every case, negative the anticipated benefit. The same surgeon (Dzondi) afterwards suggested an improved operation, which he details in Hufeland's Journal for 1818, p. 99. We shall proceed to notice the methods adopted by Dr. Fricke, of Hamburg, and Prof. Dieffenbach. Dr. Fricke's operation is peculiarly adapted for extreme cases of ectropium; and where the conjunc-

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* From Βλέφαρον, the eyelid, and πλαστική.

tiva has, from exposure, become thick and cartilaginous, he recommends its removal some days previous to the restoration of the lid.* A case will best illustrate his mode of treatment.

"The subject of the operation was a man sixty-three years of age, in whom the upper eyelid was held firmly back and everted, after the healing of a severe burn : the amount of the eversion caused the points of the ciliæ to be intermingled with the eyebrows, and the extent of the scar indicated that the muscle had been implicated even to the conjunctiva; the light was painful, and the cornea had begun to lose its brightness. The operation was commenced by a moderately extensive incision in the middle of the remains of the upper lid, beginning about two or three lines distant from the inner canthus, and one line and a half above the palpebral margin. Fricke now allowed the eyelid to be put upon the stretch by an assistant, and finished the incision, which was carried in a curved direction at the required distance from the upper palpebral margin, where he commenced, through the skin to within about two lines above the outer canthus. The cellular membrane was next separated, and, together with the degenerated and condensed muscular fibre, dissected away, so as to leave bare the conjunctiva. The margins of the wound now gaped widely apart, and the upper lid receded. This was the period selected for taking the admeasurement of the requisite flap to be transplanted, and its outline was figured on the cheek. The next step was to raise the flap, taking care to leave a sufficiently wide neck of connexion at the point of twisting; and it was then fitted to the edges of the wound in the lid, so as to be adapted accurately to the separated margins." (*Zeis*, pp. 357-9.)

At the completion of this case the patient was extremely improved; the cornea having recovered its transparency, and the conjunctiva lost its swollen and injected state. The new eyelid fulfilled its office perfectly.

The method proposed by Dieffenbach, which is the most perfect operation, is detailed by him in *Casper's Wochenschrift* for 1835, (No. i. p. 8,) and, we are informed by Dr. Zeis, has been practised with success by Chelius, Eckström, Lisfranc, &c. We say it is the more perfect operation, because, in Fricke's method, it is essential that the original palpebral margin should be available in forming the new lid; whereas, in the Berlin professor's method, the restoration is complete. We shall paraphrase our author's account of this, as of the former operation; premising that, when the condition of the conjunctiva is tolerably sound, it is dissected up from the remnants of the former lid, so as to be employed as a lining for the fresh one. Of course, the preexistence of any malignant affection, such as carcinoma, forbids this reservation of what might communicate disease to the new structure: the advantage, however, of the modification, when practicable, is self-evident. The operation is commenced by two incisions, one extending from either commissure of the tarsus, which are so inclined towards each other as to meet at an acute angle—on the cheek when the lower lid is the object of restoration, and above the eyebrow when the upper lid is defective: this triangular flap, of which the third side is the remnant of the former lid, is then dissected up, and completely removed; care being taken to spare, as much as possible, the neighbouring nervous filaments. The space thus left is that intended to be occupied by the transplanted flap. The next step, whether for upper or lower lid, is to carry a horizontal incision from the external canthus over the zygoma, and in a straight line towards the external auditory meatus; and this incision must, in any case, exceed in

* Die Bildung neuer Augenlieder nach Zerstörungen.   Hamburg, 1829. 8vo.

length the breadth of the defect in the eyelid. From the extreme outer point of this incision another is carried (when the lower lid is required) downwards upon the cheek, and for the upper lid upwards upon the temple. In either case, this incision must be nearly parallel to the outer line of the removed flap; its termination being on a level with, though slightly approximated to, the point of the same. Here, then, we have the means prepared for replacing the lid. The new flap is gently raised, and, after a careful cleansing of the space prepared for it, removed to its new position. The twisting of the broad pedicle, which is thus placed inferiorly, is very slight in this operation; for that which formed the superior margin of the flap becomes the edge of the new lower lid; the converse being the case in the upper operation. The same course, as regards sutures, is pursued in this as in the rhinoplastic operation. " So perfect," concludes Dr. Zeis, " has been the restoration in these cases, that Dieffenbach has of late years operated on numerous individuals for both defects, in whom the difference between the natural and artificial eyelid could not be detected." (pp. 360-3.)* A similar form of operation has been practised by the same surgeon, for complete ectropium with eversion of the outer commissure. He excises this latter portion, together with a triangular piece of the neighbouring integument of the temple, one side of it facing inwards, and one angle pointing towards the ear; a curved incision is then carried above the supra-orbitar arch, and another, of an inch and a half in extent, beneath the lower orbitar margin, and towards the nose. Both of these crescent-shaped flaps are then raised, and, after closing the temple-wound, are adapted as new lids to the remaining conjunctiva. (p. 364.) The ordinary operation resorted to by Dieffenbach for eversion of the lower lid will be rendered intelligible by the accompanying illustration. The triangular flap in the left-hand figure being raised, the
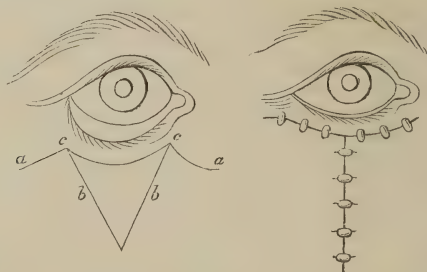
sections _a, a_ are extended freely on either side, to allow of the ready approximation of the two sides, _b, b_: these being then fixed by suture, the two cut margins, _a c_ and _c a_ are connected to the corresponding margins of the lower lid included between _c, c._ The whole lid is thus raised, and the parts are made to assume a natural and healthy character. (_Zeis_, p. 378.) Blandin does not appear to have been so fortunate in his blepharoplastic operations, even according to his own account; a fact which tempts Dr. Zeis to remark, that he had better have refrained

from narrating one of his cases altogether.   He, however, relates an instance in which Jobert operated successfully for restoring a lower lid, after the removal of the original one in a cancerous state: the flap was derived from the malar region. (*Blandin*, p. 64.)

We would fain proceed further with a detailed analysis of the present chapter, which contains many interesting modifications of the above operations, for various forms of ectropium, entropium, lagophthalmos, &c., by Dieffenbach, Jäger, Von Ammon, and others; but our limits forbid us entering more at large upon the subject of complex operations, which require little short of transcription to render them intelligible: we must therefore refer our readers to the original, whilst we proceed to a brief notice of the ensuing chapters.

The *Cheiloplastic* operation* is the next in succession treated of by Dr. Zeis, and may be strictly defined as that branch of our subject which is directed to the restoration of the upper or lower lip, exclusive of the treatment required for remedying various modified abnormal conditions, such as congenital defects, contraction of the mouth, &c.   This form of operation is by no means of so late a date as that last described; but was, as formerly remarked, of ancient origin.   Dr. Zeis first notices a misapplication of this operation in cases where the congenital defect of harelip is such as to leave a wide space between the separated portions; and justly remarks, that the deficiency is never so great but that the yielding condition and lax texture of the cheeks is such as always to admit of the far simpler remedial means of approximating and uniting the opposed margins of the fissure. " The most common cause of destruction of the lips," observes Dr. Zeis, " is real cancer, which usually attacks the lower lip, or some modification of this disease extending from the nose or commissure of the mouth over the upper lip."   Accidents, and other forms of disease, may likewise give rise to a loss of structure, requiring the art of the surgeon to procure a partial or total restoration of these organs.   Nor must it be imagined that the defect is simply one affecting the appearance or even comfort of the patient: the loss of the under lip is of the most serious import, as allowing the escape of the saliva.   Taliacotius, in his operation for the restoration of the lips, procured his material from the same source as that by which he supplied the loss of the nose, viz. the arm.   But we shall pass over his and the Indian method, to notice the more recent modes of performing the operation. This branch of plastic surgery has received the attention of many eminent surgeons, amongst whom we may enumerate Delpech, Dupuytren, Lynn, (who, as Mr. Carpue informs us, imitated the Indian operation;) and, in the present day, of Velpeau, Roux, Dieffenbach, and many of our own countrymen.   The operation practised by Chopart consisted of separating and drawing upwards the integument of the chin for replacing the lower lip; a method which, though simple, is obnoxious to the disadvantages resulting from after-contraction.   Dupuytren's operation was an improvement on this, inasmuch as he liberated the integument of the cheeks by free incisions, for the purpose of facilitating the removal of the required flaps: and his success was proportionably great, as we learn from a case detailed in his " Leçons orales de Clinique chirurgicale,"

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* From Χἔιλος, the lip, and πλαστικἠ.

(tom. i. p. 25.)   Roux has practised a further modification, by removing the prominent centre of the lower jaw, to allow of the more ready elevation of the integument covering it; and he conceives that an analogous operation in the upper maxilla might be desirable and practicable.   After noticing these and other forms of operations for effecting the same result, Dr. Zeis at length ushers in the method adopted by Dieffenbach, with even more than the ordinary allowance of flattery, which, however merited, must, in such doses, be rather nauseating to the Berlin professor; "for," says our author, "had nothing more than what I have already related been done for the cheiloplastic operation, it would indeed stand low: but, as plants thrive in the hand of the gardener, so is it likewise with this and with all other plastic operations which Dieffenbach has undertaken, and which have received such important improvements from him." (p. 419.)   The improvements alluded to are these: that, with his accustomed boldness, Dieffenbach divided not only the integument but the whole cheek in his lateral incisions; and that, secondly, by a form of operation analogous to that described in the last chapter, for restoring the eyelids, he reproduced lips, not of skin alone, but consisting of sections of the cheeks, and therefore endowed with all the requisite constituents of mucous membrane, muscle, &c.   This latter operation we shall give according to Dr. Zeis's description.

" Having pared away the useless remains of the former under lip, or refreshed the cicatrized margin, a horizontal incision, about two inches long, is carried from either angle of the mouth outwards through the cheeks, so as to throw the mouth widely open.   The length of these incisions must be regulated according to the width of the mouth; or, as a general rule, the combined incisions must somewhat exceed in length the breadth of the upper lip.   From the outer point of each of these, another incision is next carried obliquely downwards and towards the median line; the section in this case likewise extending through the whole thickness of the cheek.   Thus, by means of the first operation for paring the cicatrix, and by the succeeding horizontal and vertical incisions, a flap will be prepared on either side to replace the defective lip: this flap is of a quadrangular form, and maintains a connexion of more than an inch wide with the soft parts covering the rim of the lower jaw.   It may be useful further to separate the mucous membrane at its attachment to the gums, to allow of the more ready traction of the flaps." (p. 420.)

This is rather a fearful operation, considering the necessary injury done to the trunk of the facial artery, the division of large nervous filaments, and the probable, if not certain, section of the parotid duct; yet has Prof. Dieffenbach practised it with perfect success, and without permanent ill consequences.   Mr. Liston gives a preference to the simpler operation of raising a flap from under the chin: he recommends that the connecting peduncle should be left "thick and fleshy," to ensure a more active circulation through the transplanted skin.   "After adhesion has been completed," he adds, " the (twisted) attachment is divided, and as much removed, in a wedgelike form, as will admit of the lower part of the flap being laid down smoothly, when it is retained in close apposition with the subjacent parts, either by suture or bandage." (p. 235.)   This operation was performed by Mr. Liston ten years since.

In connexion with the last subject, the next two chapters are occupied with the *Stomatoplastic* and *Meloplastic* operations,* which signify

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* Στομα, στοματος, the mouth, Μηλον, or rather Μηλα, the cheeks.

relatively the restoration of the *mouth* and *cheeks*. As Dr. Zeis remarks,
" the right of the former to admission amongst the plastic operations may
fairly be questioned, as the mouth may be said to hold a *negative* rela-
tion to the lips." The two subjects are, however, to a certain extent
related; and, although the object of the stomatoplastic operation is pre-
cisely the reverse of most other forms of plastic surgery, viz. the enlarge-
ment instead of the closure of an opening, it must be admitted that it is
as essential to have a mouth as a nose or cheeks; therefore will we go a
short distance with our author in his description of the means proposed
for remedying the defect, which may at any rate be termed *positive*. The
contraction of the orifice of the mouth, or the adhesion of its margins, is
a great deformity, as well as being a source of extreme inconvenience,
especially when the amount of diminution in circumference is such as to
interfere with the introduction of solid food; and, when combined with a
depressed nose and obliterated nostrils, as is frequently the case where
the common cause is syphilis, the aspect is rendered hideous and revolt-
ing. To the inexperienced in such matters nothing would appear easier
than to remedy the above condition by simple incisions; yet practical
surgeons are but too well acquainted with the obstinate tendency to con-
traction so often evinced by skin and cellular membrane which have been
the subject of tedious or ill-conditioned forms of ulceration. Of such
class are burns, syphilitic or phagedenic ulcers, &c., each the occasional
source of contracted mouth: and to these we may add the abuse of
mercury, as no infrequent cause of the destruction of soft parts about
the mouth and nose.

Dr. Zeis adopts Diffenbach's division of the different modifications of
this deformity, which he classes under three heads: " 1. Adhesion of
the inner surface of the lips and cheeks to the jaws. 2. Contraction of
the outlet of the mouth, reducing the aperture to the form of a round
hole. 3. Such destruction of the lips and loss of structure in the whole
circumference of the aperture, as to leave the teeth denuded and prevent
the separation of the jaws." (p. 436.) This last-mentioned form is of
far less frequent occurrence than the others. In simple contraction of
the orifice of the mouth, mechanical dilatation by bougies and similar
instruments has been employed; but of these Dr. Zeis does not approve;
" for they tend to produce great discomfort by exciting irritation and
excoriation on the margins of the aperture, and cannot be of any avail,
owing to the indurated condition of the parts affected; and when re-
linquished, the opening contracts even more rapidly than before."
(p. 438.) In these simpler forms, where division alone might not be
successful, Dieffenbach recommends that, in addition, a portion of the
neighbouring mucous membrane should be detached from its cellular
connexions, and drawn over the cut surfaces: being fixed in this
position by sutures or needles, adhesion cannot take place.

This operation is so ingenious, and has succeeded so well in the hands
of others, besides its distinguished originator, that the several steps of
it are worth detailing. We suppose a case then, in which the aperture
of the mouth has been reduced to a mere rounded orifice by the con-
tracted cicatrix of an ulcerated surface. The patient being seated, the
fore-finger of the left hand is introduced within the oval aperture, and
pressed outwards: the margin of the opening being thus rendered pro-

minent, is pierced by one blade of a pair of narrow, straight scissors, which is carried horizontally backwards and outwards external to the mucous membrane, and as far as it is desirable to enlarge the mouth on one side of the mesial line: the blades are then closed, and all the superficial structures, such as skin, cellular membrane, muscles, &c., are divided at one sweep. A second incision parallel, but inferior to the first, is next accomplished in a similar manner; the former must be on a plane superior, and the latter inferior to the commissure of the lips, the distance between the two being about three lines. These incisions are then united at their external extremities by a small crescentic section, and the thus isolated flap is dissected out. The jaws being now widely separated, the stretched mucous membrane is divided horizontally and midway between the two incisions, care being taken to leave sufficient undivided for reflexion over the new commissure. The flaps are lastly everted above and below, and fixed by suture so as to form an investment to the newly-opposed surfaces. The same course is then pursued on the opposite side of the aperture. Dr. Mütter, of Philadelphia, to whom we have already alluded, has successfully performed this operation.

Where the mucous membrane is internally adherent to a considerable extent, slices are removed from the cheeks by the aid of scissors, and the adhesions being freely divided, the mucous membrane contracts, and the parts are then readapted, the required aperture being left. For the third form, a most sanguinary operation has been proposed and successfully practised by Professor Dieffenbach, (Erfahrungen, Bd. 3, p. 110;) this is also given at length by Dr. Zeis, but is too long for insertion here: it consisted in paring away the ancient cicatrices, and replacing the soft parts from the integument of the upper and lower jaws, the requisite aperture being left for the mouth.

Defects of the *cheeks* are perhaps amongst the most difficult to remedy where the loss of structure is extensive. Much, however, may be done by drawing upon the surrounding soft parts, and by actual transplantation. Roux has practised a very ingenious mode of aiding the ordinary removal of skin: it consists in procuring the required portion from a distance, and gradually conveying it by separate operations to the defective spot. A case of this nature is narrated by Blandin, (p. 96,) in which a girl had lost a portion of the left side of the upper lip, the corresponding ala of the nose, and part of the cheek; the flap was borrowed from the lower lip, and being first attached to the upper lip, was subsequently transferred to the cheek: the deformity was thus removed.

On introducing the subject of *fistula lacrymalis*, Dr. Zeis remarks, that "the great variety of methods recommended for the cure of this complaint demonstrates the doubtful result of the operation. . . . . . The ordinary treatment by incision will frequently prove abortive, in consequence of the opening failing to close." (p. 456.) Thus, then, is the case for the plastic surgeon made clear; and after the failure of other remedial agents, Dieffenbach has recommended the following operation, which we shall illustrate by a case. A lady, who had been operated on six years previously for fistula lacrymalis, applied to him for relief, after every attempt to close the orifice had been resisted. The

circumference of the aperture was red and swollen, a condition in which the conjunctiva generally participated, as well as the cheek from the irritation of the tears : the nasal duct was likewise impervious. This canal was first bored, and a wire passed through into the nose. Six weeks were now allowed to intervene, at the end of which period this style was removed, and the operation proceeded with. " A crescentic portion of integument was first detached from the inner angle of the eye ; a semicircular incision was next made on the opposite side of the opening, and an oval flap thus produced, three lines wide and four long, the upper and lower extremities of which retained their connexion to the skin of the nose : the flap was then drawn over the fistulous aperture, in such manner that its posterior margin came in contact with the opposed side of the opening, where it was fixed by means of fine needles." The case was ultimately successful.

In order to remedy the unsightly appearance (we mean no pun) presented by the sunken eyelids after extirpation of the globe, Dieffenbach has recommended an operation for filling the cavity, which consists in dividing the outer commissure of the lids, and robbing the neighbouring portion of the temple and zygoma of its integument: these flaps are then placed in the orbit and made fast by sutures to the circumference of the lids; which latter are then closed over by strips of adhesive plaster, and the margins of the temporal wound are approximated. Of course this operation is not intended to supersede the employment of an artificial globe; nor can we consider it very applicable in any case.

The operation for the cure of fissured palate is omitted for the same reason that led our author to avoid mentioning that for harelip : we, however, have a short chapter upon the *restoration* of the *soft palate*, which is named the *Staphyloplastic* operation.* The case, related by Dr. Zeis, of a girl operated on by Dieffenbach did not terminate satisfactorily. The operation must of course be modified according to the amount of loss of structure; and can, in any case, even when successful, be but an imperfect substitute for the original palate.

The *Otoplastic* operation † occupies chapter ix. Taliacotius, as we formerly stated, practised the restoration of the ears, employing for that purpose the neighbouring skin of the mastoid region. We have but few recent examples of this form of plastic surgery. Dieffenbach recommends a similar operation to that adopted by the Italian Professor; and states that he has, in the same way, remedied partial loss of the ears. (p. 467.)

The *Bronchoplastic* operation ‡ has, for its object, the closing of fistula in the trachea. The most successful, and therefore the most desirable, method is that recommended by Professor Velpeau, and consists, " 1, in the formation of a flap, the figure of which is a rectangle drawn out, with its base separated some lines from the solution of continuity; 2, in the rolling of this flap on its *cutaneous* surface into a sort of plug which is to be introduced into the aperture to be closed." Velpeau remarks, that this form of operation is applicable to the cure of various kinds of fistula, apertures in the intestines, the radical cure of hernia,

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* From Σταφυλή, a plummet, a grape: *met.* the uvula.
† From Οὖς, ὠτος, the ear.
‡ From Βρογχος, the throat, the trachea.

&c. (*Blandin*, p. 154.)   A case of laryngeal fistula is related by Blandin, which had resisted the ordinary form of plastic operation, but yielded to the above mode of treatment; the voice, deglutition, and respiration, which had been materially impaired or interfered with, being thus restored. (p. 160.) It is almost unnecessary to remark, that the edges of the fistulous orifice require paring.

In the Gazette Médicale, (1834, No. 42,) there is a paper by M. Martinet de la Creuse, in which he demonstrates the valuable properties of plastic surgery in preventing the return of cancer and other malignant diseases after removal of the parts affected.   The cases he cites are extracted at length by both Zeis (p. 471) and Blandin (p. 229.)   The nature of his operation was simply to supply a sufficiency of foreign integument to close the aperture left after excision of the diseased structure.   Martinet permitted an interval to elapse, to allow of suppuration and granulation being established; but Blandin thinks it better to perform the transplantation at once.   Both our German and French authors speak in a cautious manner regarding the general application of M. Martinet's deduction from the very limited data he possesses, viz. four cases.

In chapters xii. and xiii. of Dr. Zeis's work, we are taught the method of *restoring* the *prepuce* and *scrotum*.   The former of these, termed the *Posthioplastic* operation,* dates its origin as far back as the period when the Jews, in the Roman empire, used to furnish themselves with fresh prepuces, in order to avoid the persecution attached to their race.   The simplest form of operation is applicable to cases of naturally contracted or shortened prepuce; it consists in drawing forwards the foreskin until it covers the glans penis, and then making an annular incision through the integument posterior to it.   Care should be taken not to injure the urethra, and a ligature must be placed around the prepuce so as to retain it in its new position, allowing only room for the urine to escape: the gaping wound must heal by granulation. (p. 480.)   Where the prepuce is totally deficient, an annular incision must be made near the base of the glans, and the integument dissected up to the requisite extent to allow of the new foreskin being drawn forwards; in which position it must be retained after the inflammation has a little subsided, by means of a bandage applied around the root of the penis.   The same operation is applicable after the removal, by circumcision, of an indurated and morbidly elongated prepuce.

Respecting the *Oscheoplastic* operation† we shall say but little.   It is usually required either after spreading ulceration has exposed the testicles, or, as is more common, in cases where disease, such as elephantiasis, requires the removal of all the original scrotum.   For this latter form of defect a complex operation was performed by Delpech, and more recently by Clot-Bey and Velpeau. (Zeis, p. 487, Blandin, p. 75.)   Of simple exposure of the testicles from sloughing, we have witnessed more than one case in which nature has reproduced the whole scrotal tegument without the aid of plastic surgery.   Labat states, that he has performed this operation by borrowing the integument from the thigh or from the belly. (Rhinoplastic, p. 336.)

* From Πόσθιον (dim. of πόσθη), the prepuce.
† From Ὄσχη or οσχέα, the scrotum.

The treatment of *prolapsed uterus* is included in the wide grasp of our extensive subject. In such cases as admit of a ready return of the womb, but resist mechanical means of retention, Dr. Zeis recommends the partial union of the nymphæ, as practised by Fricke, presupposing that there is no disorganization of the uterus, nor extensive destruction of the soft parts externally. (p. 501.) A similar result has been aimed at by the removal of strips from the vaginal mucous membrane, but with variable success. We have witnessed an analogous operation for prolapse of the bladder into the vagina, the issue of which was not very encouraging.

The *Urethro-plastic* operation (which occupies chap. xv.) is an important one, and therefore extends through several pages of Dr. Zeis's work. We shall notice some of the more recent operations for the cure of urinary fistula, which owe their chief improvements to Dieffenbach. The size of fistulous apertures, communicating with the urethra, differs very materially, varying from a caliber not more than sufficient to admit a bristle, to the diameter of a good-sized catheter; the flow of urine through them of course bears a proportion to their size: all are troublesome, but those situated near to the scrotum are the greatest source of annoyance to the patient. Dieffenbach remarks, that he never saw a small fistula communicate directly with the surface, as is the case with those possessing large mouths; the former usually pierce the canal obliquely, from behind forwards and outwards. The application of caustic washes, and the use of simple suture after paring the edges, are amongst the curative means which have been employed with occasional success: but, independently of their questionable issue, these methods are open to the objection of leaving the fistulous orifice more gaping than previously, and the hazard of producing considerable inflammation, and even infiltration of urine, as Dieffenbach has proved experimentally. (*Zeis*, p. 509.) Nor has this surgeon obtained better results from the employment of the twisted suture over a needle. Now, as the tension appeared to be in this, as in many other instances, the cause of failure, Dieffenbach has proposed and successfully practised the following operation. " An elongated, oval flap of integument, *a*, having
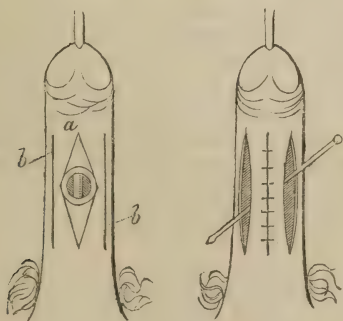
the fistula in its centre, is removed, and the margins of the wound are then armed with a sufficient supply of sutures to close it; a simple

lateral incision, b, b, is next made to the same extent, and at a short
distance removed from either margin of the former, and the flaps raised
from their central connexion : these are now approximated by tying the
sutures, and a catheter is kept in the bladder . . . . Nocturnal
erections of the penis might thus occur without disturbance of the
sutures, and although the urine would flow for a time by the side of the
catheter, and make its escape by the lateral apertures, still the cure was
usually completed in about a fortnight." (*Zeis*, p. 511.)

Where simple sutures have been found objectionable, small leather
splints have been interposed on the inner margin of either flap, to act
as a protection and to preserve the parts in better apposition.   Some of
our surgeons have successfully practised simple transplantation of in-
tegument for closing fistulæ; and, according to Blandin (p. 180),
M. Alliot recommends this form of operation in preference to that of
Dieffenbach, as he is of opinion that the introduction of the urine
between the interstices of the sutures is the most common source of
ill success.   Blandin himself gives the preference to Velpeau's plan of
plugging the orifice by a roll of skin, as already described for the cure
of tracheal fistulæ.   Delpech, in his " Clinical Surgery," relates a
case in which he performed the simple transplanting operation, deriving
his flap from the inguinal region ; but gangrene succeeded, and the cure
was only partial.   The cause of the fistula was, in this instance,
curious.   The patient, a young lad, was in the habit of wetting his bed
at night, for which, being menaced with severe treatment by his parents,
he devised the plan of placing a ligature about his penis : but not taking
the precaution of including the prepuce alone or of graduating the
pressure, the result was, between this and the consequent swelling, that
the string cut its way into the corpora cavernosa and urethra.   We have
several other methods of closing urethral fistulæ cited by Dr. Zeis,—such
as, twisting round the whole skin of the penis upon its axis (515 ;) the
annular removal of the fore-skin backwards, for closing a fistula im-
mediately behind the prepuce (517 ;) a similar transplantation of the
skin of the penis forwards, where the prepuce is deficient to close a
fistula immediately beneath the glans (518 ;) and, lastly, the slip or
running suture by which the mouth of the fistula is closed like a bag,
as we had occasion to describe a few pages back : this last operation
possesses the prominent advantage of leaving the patient, in case of its
failure, not worse off than he was before the experiment.   For further
details we must refer our readers to the original works.

The term *Cystoplastic* operation,[*] has been indiscriminately, and
therefore incorrectly, applied to all forms of surgical assistance for the
cure of fistulous openings communicating with the bladder: it should
correctly be limited to the cure by translation of skin from a neigh-
bouring part.   Of this true cystoplastic process Dr. Zeis notices the
method adopted by Delpech, for the cure of congenital inversion of
the bladder.   To this end an elliptical flap of skin was raised from the
hypogastric region, and fixed to the pared margin of the gaping aper-
ture, care being taken not to include the mucous membrane of the

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[*] From Κύστη, or κύστις, a bladder ; the urinary bladder.

bladder in the sutures : a catheter was retained in the urethra till the cure was completed.

Of all the miserable conditions we have had occasion to allude to in the foregoing pages, perhaps no one exceeds, and few equal, the wretched state to which a patient is reduced by *vesico-vaginal fistula*. Of this a vivid picture is drawn by Dieffenbach, (*Med. Zeitung*, No. 25, 1836,) the faithfulness of which we must reluctantly admit. " Such unhappy beings," he observes, " are forced to exclude themselves from society; the very atmosphere surrounding them is polluted by their presence, and even their children shun them : thus rendered miserable, both morally and physically, they yield themselves a prey to apathy; or a pious resignation alone saves them from self-destruction." (*Zeis*, p. 526-7.) All mechanical means for palliating this wretchedness have proved of little or no avail: and the employment of the simple suture has rarely been attended with happy results; for the presence of the urine mars all efforts at adhesion or granulation. The ordinary sources of this form of fistula are ascribed by Dr. Zeis to " difficult labours, and the rough use of mechanical aid in the same ; injuries done in passing the catheter, or by bad pessaries; stone in the bladder, lithotomy, abscess, &c., are further causes of these fistulæ, which are occasionally complicated with prolapse or carcinoma uteri, fistula or stricture of the rectum, &c." (p. 525.) Dieffenbach's running suture, to which we have more than once alluded, has been frequently and successfully employed by its inventor, and is that form of operation which is preferred by him, although he admits that its employment must not be indiscriminate, and that by it the desired object is not always obtained. Two unsuccessful cases are related by Zeis, one of the patients dying from inflammation of the bladder. M. Jobert has had some success in closing a vesico-vaginal fistula by the true plastic method: " this operation consisted," says Blandin, " in paring the edges of the fistulous orifice, and adapting over it an oval flap derived from the internal surface of the larger labia." The case related at page 83 was partially successful. In another instance, much inconvenience was experienced from the aftergrowth of hair on the transplanted flap.*

The plastic treatment of *artificial anus* is passed over in one page. A case is quoted from Gräfe and Walther's Journal, (Bd. ii. p. 655,) in which a perfect cure was affected by simple transplantation of integument over such an opening which had been made in a hernial tumour, by a surgeon who mistook the swelling for an abscess. Dieffenbach is of opinion that his running suture is applicable to these cases.

Lastly, we have chap. xviii. devoted to the means of radically curing hernia by a plastic operation; but we treated so fully of this in our Twelfth Number (p. 341), that we may pass it entirely without notice here.

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* We had occasion lately to witness a case which would have puzzled even the ingenuity of Dieffenbach to cure. It consisted in destruction, by ulceration, of the whole urethra, the aperture thus left allowing of the free ingress of the little finger: the incontinence of urine was therefore established. Yet the neck of the bladder and the annular layer of muscular fibre surrounding it were, apparently, undisturbed ; a circumstance which, taken in conjunction with many other facts, renders it highly probable that the so-called sphincter has little or no share in retaining the urine either in man or woman.

Thus have we arrived at the conclusion of our subject, although not quite at the end of Dr. Zeis's volume: he has still another chapter devoted to the *division of muscles and tendons* for the purpose of remedying deformities resulting from their permanent contraction. The analysis of this chapter we intentionally omit, because it is not essentially a part of the subject we have been discussing, and because we promise ourselves an opportunity of recurring to it separately and more at length than our present limits would admit.

We have but little to say respecting the relative merits of the two works which have formed the principal basis of the foregoing article; indeed they scarcely bear comparison. That of Dr. Zeis is unquestionably the more perfect and better arranged, although vastly more bulky than is essential for even a full discussion of the various branches of plastic surgery; but this diffuseness is too generally cultivated to be considered a fault in Germany. The cases are given too much in detail by both authors; and this is the more reprehensible in Blandin, who professes to have compressed his matter into as small a compass as possible. We certainly cannot tax Dr. Zeis with having treated his subject superficially, a charge which, in his preface, he makes against his French contemporary, in rather an ungenerous manner: indeed, both here and in many parts of his work, as we have more than once had occasion to observe, the contemptuous tone and very national ill feeling evinced by Dr. Zeis towards M. Blandin and his countrymen is, to say the least, uncourteous and unbecoming a man of science. The above characteristic is not rendered less prominent by the fulsome flattery with which his own countrymen, especially Dieffenbach, are loaded, a *quo* which was not, however, without its *quid;* for we find the Berlin Professor penning, in return, a recommendatory preface of a page and a half, and allowing (are we right in so supposing?) under this excuse his name and its appendages to appear in the title-page. We should think such a book-selling job would scarcely be permitted to pass unnoticed by the German press. We have only to add, that Dr. Zeis's work is embellished by numerous and very useful illustrative woodcuts, and two coloured engravings representing the condition of a new-formed nose in its various stages, passing into a state of gangrene. At the conclusion of his work, M. Blandin gives a recapitulation of the results of eighty-four cases, including the various forms of plastic surgery: but these data are too limited, and the deductions therefore too vague and unsatisfactory, to render such summary either interesting or useful. We have already, on more than one occasion, expressed our opinion of Mr. Liston's treatise, and need not, therefore, repeat it here. The work of Professor Dieffenbach has also been some time in the hands of the profession, and abounds in that originality of conception and boldness which characterize the practice of its author.

Art. V.

1. *The Works of* John Hunter, f.r.s.; *with Notes by* James F. Palmer.
   In four Volumes.   Vol. III.   *A Treatise on the Blood, Inflammation,
   and Gunshot Wounds.—London*, 1837.   8vo. pp. 586.

2. *A Treatise on Inflammation.*   By James Macartney, m.d. f.r.s.
   f.l.s. m.r.i.a. &c. &c.—*London*, 1838.   4to. pp. 214.

3. *Illustrations of the Elementary Forms of Disease.*   By Robert
   Carswell, m.d., Professor of Pathological Anatomy in University
   College, London, &c.   Fasciculus XII.   *Inflammation.* — *London*,
   1838.   Folio. pp. 8.

4. *Teoria della Flogosi, di* Giovanni Rasori.—*Livorno*, 1837.   8vo.
   pp. 260.
   Theory of Inflammation.   By J. Rasori.—*Leghorn*, 1837.

The subject of inflammation is one of so comprehensive a nature, and
capable of being treated in such a variety of ways, that our readers will
not be surprised to learn that, of the four works dedicated to it, whose
titles head this article, scarcely any two have more than a name in com-
mon.   It will therefore be necessary to pass them separately in review;
but we hope to be able to do this in such a manner as to maintain the
unity of the subject, and to present to our readers an outline of the most
generally approved and, in our judgment, the most philosophical opi-
nions on the principal topics under discussion.   We shall commence by
giving a sketch of the scope and character of each of the treatises before
us; and the proud eminence which the first has so long maintained as the
highest authority on the scientific part of the subject demands an especial
notice from us,—a notice which we are the more willing to give, because
we are convinced that many of the present generation of our professional
brethren are content to become acquainted with the doctrines of Hunter
at secondhand, and thus receive them in a mutilated and distorted form.
The present elegant edition of this incomparable work (we speak of it, of
course, in reference to the state of knowledge at the time it was com-
posed,) will afford to all an easy means of access to this last literary
production of a great and gifted mind.   It is one which contains vast
treasures of thought, only to be acquired, however, by deep and labori-
ous research: it is not, therefore, so much a work for the youthful
student as for him who is already considerably advanced in professional
knowledge.   The notes and commentaries added by Mr. Palmer are for
the most part of a very excellent character, and, in the first or theoreti-
cal portion of the treatise especially, give a fair view of the present state
of knowledge on several interesting points, and place many of Hunter's
opinions in a clearer light than that in which the text presents them.
We cannot extend our praise, however, to all of those on the practical
portion of the treatise; and we shall feel it our duty hereafter to advert
to what we deem important errors in Mr. P.'s views of treatment.   These,
however, are so completely separated from the original text that they
leave its value quite unimpaired.

A peculiar interest attaches to all Hunter's writings.   He has left a

name which must endure as long as any reverence for the great of past times remains amongst us. Such men give a spring and life to a community by their presence, their society, and fame; and we read their works with a delight which increases with the importance of the subject. The Treatise on the Blood, Inflammation, and Gunshot Wounds has been known to the professional public for nearly half a century. It was compiled, we are told by its author in his introduction, "from notes and memorandums of observations made in the course of twelve years' residence in London," and afterwards arranged while he was acting as a surgeon on the staff in 1762, during the expedition against Belleisle. From this period Mr. Hunter kept his manuscript beside him, making such corrections and alterations as further experience and observation suggested, till 1793, when the liberty taken by others with his discoveries made him determine on its publication, "both from a wish to preserve his own right, and also to give in a more perfect form what was thought worthy of the public even in a mutilated shape." Discreditable as this circumstance is to those engaged in such a transaction, it is nevertheless to be viewed as a fortunate occurrence, since it urged on Hunter (always jealous of his own claims) to undertake a labour which might have been otherwise neglected. Indeed, we doubt whether a man ever brings his faculties to bear with their full force on a subject, until he writes upon it for the instruction of others. To place it clearly before others, he feels the necessity of viewing it more vividly himself. By attempting to secure his thoughts, and fix them in an enduring form, he finds them vague and unsatisfactory, to a degree which he did not suspect; and toils for a precision and harmony of views, of which he never before felt the need. He places his subject in new lights; submits it to a searching analysis; compares and connects with it his various knowledge; seeks for it new illustrations and analogies; weighs objections; and, through these processes, often arrives at higher truths than he first aimed to illustrate. It is one of the distinctions of a great mind that it is prone to rush into twilight regions, and to catch faint glimmerings of distant and unbounded prospects; and nothing, perhaps, aids it more to pierce the shadows which surround it than the labour to unfold to other minds the indistinct conceptions which have dawned on its own. Unfortunately, only a small part of the treatise on Inflammation was printed, when Hunter was hurried away from his labours. In so far, therefore, it may be looked upon as a posthumous publication; a circumstance which would disarm criticism of its keener weapons, even if the length of time it has been before the public did not render it unnecessary for us to enter upon a full consideration of its varied contents.

One of the greatest objections expressed to Hunter's writings, and especially to the volume before us, is the difficulty and obscurity of the style; by which the mind, it is said, is wearied and exhausted, and too often no other recompense is yielded than a confused and indistinct perception of the subject of which he is treating. Much of this obscurity in the present case, Mr. Palmer informs us in his preface, is to be ascribed to the peculiar circumstances under which the work was given to the world.

"It was published under circumstances of haste, and at a period of the author's life when he regarded his state of health as very precarious, and when his faculties,

oppressed by repeated illnesses, cannot be considered to have been in their full vigour: in addition to which, only a small part of the work was through the press at the time of the author's death, and therefore it could not receive the full benefit of his corrections, or even of those of his executors, who, in consequence of the numerous professional calls upon their time, were compelled to relinquish their task. Many errors, consequently, have been allowed to pass unobserved, both in the text and punctuation, which often vitiate the sense, and still more frequently render the meaning of the author extremely difficult of extraction." (p. xix.)

On this point we shall take the liberty of stating our own sentiments. We cannot admit that the reasons which have been assigned offer a just explanation of Hunter's obscurity of style: first, because they would only account for some inaccuracies of expression, or statements too hastily or insufficiently put together; and, secondly, because we find the same thing pervading his other writings, which were the productions of his cooler moments, and when he was comparatively free from those embarrassments which crowded so thickly around him during the last years of his existence. It appears to us that this defect—for, in any case, it must be so regarded—was incidental to and inseparable from his character, arising out of his habits of thought and observation, and his previously defective literary education. In truth, he himself was quite aware of it; for we find him stating to a friend, respecting his treatise on the Venereal Disease, that, in order to render the language intelligible, he met a committee of three gentlemen, to whose correction every page was submitted. While we mean not, therefore, to deny that the charge which has been made has some grounds, we think, at the same time, that it has been much exaggerated: and when we reflect that the obscurity of Hunter's style has deterred many from availing themselves of his invaluable labours, we cannot but regret the fastidiousness and effeminacy of modern readers. We are aware that simplicity and perspicuity are essential attributes of a good style; but there are others, as energy and depth of thought, equally noble and important; and in these we will not admit that Hunter has ever been surpassed. To be universally intelligible is not the highest merit. The best style is not that which puts the reader in the shortest time in possession of the author's naked thoughts, but that which is the truest image of a great intellect, and which conveys fully and carries farthest into other minds the conceptions and feelings of a profound and lofty spirit. A great mind, such as Hunter possessed, cannot, without injurious constraint, lower itself to the grasp of ordinary individuals. Its own natural movement is free, bold, and majestic; and it ought not to be compelled to part with these attributes in order that the multitude may be able to keep pace with it. For our own part, we prefer easy reading, especially in our moments of relaxation; but we delight, at the same time, in having our faculties tasked by master spirits. There are many writings which are clear through their shallowness. There are minds, again, which grasp at once vast fields of thought, just as the eye surveys at once wide fields of grandeur and beauty; and which, in their moments of inspiration, when thick-coming thoughts and images crowd in upon them, pour out their treasures in a manner perplexing to ordinary readers, but kindling to congenial spirits like their own. We would not have all compositions of this character, but we would impose no over-strict laws on a great mind. We would let

it address us in its own language, and in a tone which accords with its own ear. If not understood at the time, let it look forward with a generous confidence to the improvements of succeeding ages, and utter thoughts which others in future years will unravel.

We have been led to make these remarks, not so much in vindication of Hunter as that we think our own times seem to demand them. Medical literature is becoming in some respects too common and too popular: the whole community is now turned into medical readers. With this we so far acquiesce; nay, we rejoice that so much talent has been employed in making a certain kind of knowledge accessible unto all: we look, indeed, on the general diffusion of knowledge as one of the noblest and most distinguished features by which the coming will be separated from past ages. But good is often conjoined with evil; and we fear lest men of genius be led away, by the shout of popular applause or the desire of obtaining sudden wealth, from pursuing that deeper and stiller path where that thrilling note alone is heard which sounds louder and clearer throughout all succeeding generations.

The treatise on the Blood and Inflammation has been regarded as the greatest effort of Hunter's genius, and that upon which his reputation has principally rested. We do not assent to this opinion: it is only from those unacquainted with his other works that such an opinion could have escaped. Without meaning to disparage it, we may say that it owes very much of the attention which it has excited to the previous fame of its author, and to its having been the first in which the doctrines of inflammation were set forth in a luminous and philosophical manner; but, when compared with Hunter's stupendous manual labours, it sinks far into the shade. We value it chiefly as showing us the mind of a master on a subject which, above all others, presses itself upon the attention of the physician or surgeon, both from the frequency of its occurrence and its intimate connexion with diseased action. We are desirous of ascertaining in what conclusions such a man rested, after a life of magnanimous efforts to unfold the hidden laws of nature, and to trace the order and regularity with which they occur. The work before us shows that Hunter's natural progress was from one field of discovery to another; that he could give a freshness and vividness to truths which had become worn, we had almost said tarnished, by long and familiar handling; that he could bind together, by mysterious affinities, remote discoveries, and rear fabrics of utility and beauty from the rude materials which other minds had neglected. His intellect seems to have been excited and developed very much by the circumstances under which he might chance to be placed; it was naturally creative, restless, stirred by a burning desire for the discovery of truth, and he was conscious of that within him which could quicken all knowledge and wield it with matchless power. In treating of practical subjects, he had not learned the superficial doctrine of later days, of discarding or setting at nought legitimate theory; his object being to combine the two, and make the latter arise naturally out of the former. His published lectures make us best acquainted with the importance which he attached to the attainment of fixed principles; for, as he himself has justly remarked, "without such knowledge a man cannot be a surgeon." If, indeed, there is an error to be found in the present treatise, independent of those which the

subsequent progress of medical science has developed, it is perhaps the undue preference assigned to this sort of investigation, and the attempt sometimes made to compel medical treatment to yield to it, however much at variance in many cases with the plain and obvious dictates furnished by experience.

The profound and searching views contained in this treatise demonstrate, in every page, Hunter's attachment to reasoning. A mere discovery, or the knowledge of merely a practical fact, was to him unsatisfactory unless he could bring his mind to comprehend the successive changes as they arose. This is another circumstance which has rendered his writings so valuable; and if he has frequently failed in following out the true process of reasoning, or in referring effects to their true causes, we must still admire the unextinguishable ardour with which he pursued the investigation. We by no means desire to set up theoretical in opposition to practical knowledge; and still less to form rules of treatment on the one which are irreconcilable with the other. We would rather, indeed, that the order were reversed. What we would wish is, that the two should, as far as possible, go hand in hand, in order to infuse a true and philosophical spirit into the study of medicine. The individual who cultivates either separately and independently retards rather than accelerates his own science. In the one case, at the bedside of a patient, he only appears as a sort of learned spectator; in the other, we regard him as little better than an acting automaton. The history of the medical literature of our own and of other countries confirms the truth of these statements. If, in former years, too much time was spent in purely speculative enquiries, in the present day the same error has been committed in the cultivation of practical knowledge. No real advancement can be made without the acquirement of sound principles, arising out of and confirmed by daily experience. They are to the medical man what the rudder is to the mariner. Their disjunction cannot be sufficiently condemned. Such a system has long enough warred against the interests of the human race, and arrested the progress of improvement. The time for its fall, we trust, is coming : it cannot come too soon.

We prize, then, the volume before us, as being the first in which more just views were disseminated, and a new light thrown over the subjects of which it treats. Previous to its appearance, the study of inflammation had been little attended to, and many of the phenomena which accompany it were ill understood. " I have endeavoured," remarks Mr. Hunter, in his introduction, " as far as my other pursuits would permit, to form this work into a regular system, one part exactly depending on another. How far I have succeeded the world must judge. But, at the same time, it ought to be considered *as a new figure composed from rough materials,* in which process little or no assistance could be had from any quarter; wherein the author is conscious of many imperfections, more of which, he is persuaded, he shall himself observe at every successive review."

Mr. Hunter may be considered the first who classified and arranged the various phenomena of inflammation; and so accurate are many of his illustrations that they have not only remained undisturbed, but little, if any, real addition has been made to them up to the present period. To say that the work is without errors, would be to say that its author was

not a man. False opinions are the rank growth of a soil which requires to be weeded as well as tilled; and we have doubtless to regret that Hunter did not live to correct those imperfections which are to be found in some of his pages. At the time the treatise was commenced, animal chemistry in particular was in a rude and imperfect state; the minute analysis of the blood was unknown; and all the phenomena which depended for explanation on chemical science were necessarily defectively detailed. Hence the reason why so many corrections are required in the new edition, to bring down this portion of the subject in accordance with the more correct views of the present day. This, however, was not the fault of Hunter, but of the age in which he lived. In some of the other departments, too, we shall have occasion to show that his views were occasionally erroneous; but at this we need not express surprise, seeing that the ground had been previously untrodden. We do not expect, in any work which has for its object the investigation of diseased action, to meet with statements which shall always remain uncontradicted, or inductions which the progress made in future years will not show to have been hastily drawn; but in Hunter's writings we find less of this than might otherwise be anticipated: his views of the animal economy, either in health or disease, were too profound, and culled from too imperishable a source, not to be in the majority of instances correct.

It has also been made a matter of complaint that Hunter should have been so little acquainted with the labours of his predecessors, or even with those of his contemporaries in his own and other countries. On this account he was himself frequently surprised that many of his discoveries had been anticipated, and the student is often at a loss to know to whom the original merit of these is due. The wisdom of every age, we may remark, is chiefly a derivation from all preceding ages, not excepting perhaps the most ancient, and should hold communication with them, just as a river, through its whole extent and in its widest overflowings, still continues to receive tribute from its infant springs. We wish not, therefore, to acquit Hunter of culpable neglect in this respect; although in his case we regret it the less, because it made him draw more deeply from the full fountains of his own vast and comprehensive mind. By his researches into the book of nature, he rendered to his profession a far greater service than if he had moulded into new and more beauteous forms the wisdom and the wealth of all his predecessors. He taught and exemplified that spirit of intellectual energy through which all the great conquests of truth have been and are to be achieved.

We have been induced to make these general remarks to save us the necessity of extracting largely from a work which has been so long known to the profession. Had the case even been otherwise, and the volume for the first time before the public, we should have entered most fully into the sentiments expressed by Mr. Palmer, in his preface, " that those who would apply the ordinary rules of a petty criticism to the present work will form a very incorrect judgment of its merits; while those who come to its perusal in the expectation of finding a simple exposition of disease will probably be much disappointed. The reader who would form a just and accurate appreciation of a work of this character should bring to the task considerable liberality of mind, and at the same time an independency of judgment, which can admit the general propriety of an

observation, and yet know how to make those due and necessary abate-
ments which all general propositions require." We would, then, recom-
mend this volume, with the other writings of Hunter, to all who feel any
interest in the study of their profession, or who have any desire to become
acquainted with the labours of a master-spirit. There is no calculating
the good their diffusion may effect, if it were only by creating in the
breasts of others the love of those pursuits—all ministering to the good
of man—amid which he lived and died. Far, however, from regarding
Hunter as standing alone and unapproachable, we believe that he is an
illustration of what many who dream not of this might arrive at in the
course of their being. In his unwearied and unexampled industry and
perseverance we find the germ of all his greatness; and we would hold
out his fame, not to excite an ineffectual admiration, but to awaken
others and ourselves to the free use and expansion of our noblest fa-
culties.

Hunter's treatise opens with a few introductory remarks, 1st, on dis-
eased actions, as being incompatible with one another; 2d, of parts
susceptible of particular diseases; 3d, of sympathy; 4th, of mortification.
The three former will be found more fully illustrated in his Lectures on
Surgery. It is not a little remarkable that the latter should be so briefly
treated of in this place, and that the consideration of it as a consequence
of inflammation should have been altogether left out of view in the body
of the work. Had Mr. Hunter lived, we have little doubt that he would
have seen the propriety of remedying this omission; and we should have
been better pleased had the defect been supplied in the present edition by a
few notes in the shape of a commentary. We shall make a few remarks
on Hunter's views on the nature of mortification, when treating of it as
a consequence of inflammation, from which this process undoubtedly
results in the majority of cases.

We shall take another opportunity of reviewing the first part of
Hunter's treatise, which consists of the chapters on the Blood and Vas-
cular System: on the present occasion we shall confine our attention to
the second part, devoted to the subject of INFLAMMATION. Of this, the
first chapter is set apart for a subject that cannot be legitimately consi-
dered under this head, namely, Union by the First Intention, of which
we shall say more hereafter. The following titles of the remaining chap-
ters of this part will give a general idea of the nature of the author's plan.
II. Fundamental Principles of Inflammation. III. The Adhesive In-
flammation. IV. Of the Suppurative Inflammation. V. Of Pus. VI.
The Ulcerative Inflammation. VII. Granulations. VIII. Of Skinning.
IX. Effects of Inflammation, and its Consequences on the Constitution.
Many of these subjects we shall touch upon, in what appears to us their
natural order, in the present or in a future article; and we shall here
only remark that, under the title of *adhesive inflammation*, Hunter
does not merely comprehend, as many in the present day might be apt
to imagine, the phenomena which accompany the process of adhesion,
but what we consider and speak of as *common inflammation ;* that is, in-
flammation not as yet followed by any ulterior effect, as suppuration or
ulceration. Hence in this chapter we find him discussing the state
of the vessels in inflammation, the local and constitutional signs of
the disorder, the effects on the system according to the structure of the

part affected, and the remedies necessary for its removal. One of the
most interesting points of enquiry, and which has received a large share
of attention and been made a subject of keen discussion, is the actual
state of the vessels of an inflamed part. Considering the amount of
labour and time spent in this investigation, we are naturally curious to
know, even at this distant period of time, in what conclusions such an
acute observer as Hunter rested. It does not appear, however, from
anything which we can detect, that he had ever examined the process of
inflammation experimentally, or as it is seen going on in the transparent
parts of an animal texture, and he seems to have remained contented
with theorising on the subject. An examination of allusions which he
makes to it will show that, while some of his notions were correct, he was
at the same time drawn into inconsistent statements, and that he evi-
dently experienced, as might be expected, the greatest difficulty in
making up his mind on this abstruse question. The remainder of the
treatise, consisting of Part iii. on the Treatment of Abscesses, and Part
iv. on Gunshot Wounds, does not call for any present remark from us.

Of the general character of Dr. Macartney's treatise we have already
stated our opinion at p. 221 of the present volume; and, in pursuance of
the plan with which we set out, we shall explain the objects and qualities
of the two other works on our list, before proceeding to examine in detail
the doctrines set forth in them. That of Dr. Carswell consists principally
of details as to those changes of structure produced by inflammation,
which it is the object of his very beautiful plates to represent; but he has
prefaced them by an account of his opinions as to the proximate cause or
essential nature of the disease; and upon this we shall offer some remarks
at a future period.   The "Teoria della Flogosi" of Rasori cannot,
however, be so summarily dismissed; and, that our readers may enter
fairly upon the consideration of a work which is by many regarded as on
a par with that of Hunter, we shall preface our account of it with a short
exposition of the principles of the school from which it originated.

To the new Italian medical school our profession stands largely indebted
for its present augmented and more correct knowledge of the precise
degree of influence exercised by many powerful agents on the animal
economy, as well as of the condition of body by which their effects are
modified, and the extreme limits within which their employment is at
once most efficacious and safe. Its founders complained bitterly of the
manner in which its tenets were misrepresented on their first introduction
to the public. Thus, by M. Broussais, one of the most conspicuous of the
writers who have undertaken to criticise them, their system was brought
under the notice of the French, some twenty years ago, under the inju-
rious and incorrect appellation of "Italian Brownism." Tommasini, one
of the most celebrated of the expositors of the new Italian doctrine, whilst
he admits its being founded in part on the first principle of Brown's
theory,—namely, the relation of organized bodies to stimuli,—asserts
that in its superstructure, whether considered theoretically or in regard
to its leading practical precepts, it differs totally from the system of the
Scottish innovator. Thus, the almost universal stimulant nature of exter-
nal agents, and the doctrine which views indirect debility as the cause or
essence of almost all diseases, are both emphatically denied by the Italian

reformers. Their doctrine of contra-stimulus is in direct opposition to the first of these dogmata; and their assertion that diseases originating in excess of stimulus preponderate mostly over those of an asthenic character, is equally at variance with the latter. Amongst the disciples of Rasori, Tommasini has especially occupied himself in adducing proof of the sthenic nature of all inflammations.

As so much error has prevailed in regard to Rasori's real opinions, and as the doctrine of contra-stimulus tinctures nearly every page of his work, it may be well briefly to enumerate its leading tenets; these are as follows: 1st. There are a great variety of substances, such as antimony, mercury, &c., which produce on the organization an effect diametrically the reverse of stimulant; controlling excitement in a direct manner, and producing those consequences immediately which were erroneously looked upon by Brown as secondary, or as the product of negative causes, i. e. of the mere diminution of stimulants. 2d. These substances, comprised under the general term contra-stimulants, often manifest their highest influence where they give rise to no increase of the evacuations. 3d. If employed unnecessarily, or pushed too far, they produce a new morbid state, which can only be subdued by the exhibition of stimulants. 4th. The magnitude of the dose of stimulants, or of counter-stimulants, which can be borne with impunity in any case, is exactly in proportion to the degree in which the opposite diathesis of counter-stimulus, or stimulus, (terms nearly equivalent to diminution or increase of vital action,) prevailed. 5th and lastly. This tolerance of medicinal agents, experimentally ascertained, affords us a much surer index and measure of the diathesis we have to deal with than do the symptoms. Such were the opinions promulgated by Rasori in the latter end of the last century, and his belief in them only ended with his life.

The present work on Inflammation, the last of Rasori's publications, is, we are told, the fruits of forty years' careful study of the phenomena of diseases and devoted attention to morbid anatomy. The collecting of materials for it, though occasionally interrupted by the disturbed state of affairs in his unhappy country, alternately the theatre of foreign war and of domestic revolution, was never, even under the most adverse circumstances, long lost sight of. Conceiving that the inductive mode of prosecuting medicine has never yet been fully adopted, and that, till this is the case, there can be no hope of its being fitted to take its station fairly by the side of the other sciences, his aim in the present treatise is to set an example, which, if followed up in the same spirit, may soon lead to the removal of this reproach. Useful induction presupposes the possession of an adequate number and variety of well-observed and carefully-recorded facts: of these Rasori is persuaded there is still a deficiency, and to assist in supplying it he states to be his first object.

In his attempts at ascertaining wherein the essence of inflammation consists, he believes himself to have taken an opposite course to that ordinarily pursued. " Others," says he, " commence their investigations by examining inflammation as it constitutes a morbid state of function in the living; but I begin, on the contrary, by considering its effects such as they remain in the dead body." Whatever novelty there was in this method when Rasori first entered on it has long ceased to exist, the

French school having made morbid anatomy the basis of nearly all their reasonings about disease, and represented its importance, if possible, even in an exaggerated point of view.

We shall notice the principal peculiarities in Rasori's work in their proper order; but we cannot help feeling that, characterized as it is by an inordinate love of theory, a dogmatical assertion of dubious facts, and a frequent feebleness of argument, neither medical science nor the character of its venerable author would have suffered materially though it had never seen the light. Compared with Hunter's treatise, rich to overflowing in original experiments, careful inductions, and profound philosophical views, the feebleness and poverty of the Italian professor make themselves painfully felt. How much he is in arrear of the present state of pathological knowledge may be deduced from his denying the possibility of an unnaturally large heart having any concern in the production of a coexisting dropsical affection; as well from his making no allusion to the condition of the interior of this organ, its valves and orifices, and lining membrane, in cases of hydropericardium, &c. As to his practice, we feel that we should not be doing our duty towards the junior members of our profession, were we not to caution them strongly against its rash adoption in acute cases; and remind them of the fearful habits of intemperance in the use of opium and vinous stimulants which could not fail to result from its extensive and unguarded application in chronic disease.

It is a prominent feature in Dr. Macartney's work, and one in which it differs from all treatises on the subject, that the author regards the *reparatory* and *protective* processes as essentially *non-inflammatory*. Of this character he considers not only union by the first intention and by granulation as partaking, but also the effusion of plastic lymph under any circumstances. He also directs attention to a mode of reparation which he terms the *modelling* process, or reparation by *natural growth*, as distinct from that by granulations. Although the peculiar effects of this process, occurring under certain conditions, are by no means unknown, as we shall presently show, to practical men, yet we believe this to be the first time that the *rationale* of it has been displayed, and the conditions on which it depends satisfactorily demonstrated. As we are disposed to coincide in Dr. Macartney's views on these subjects to a considerable extent, we shall give them in his own words, with some abridgment.

In the first place, he points out that the reparative processes cannot be as dependent on inflammation as a superficial observation of them in the human subject has induced pathologists to believe: since, in the lowest tribes of animals, and in plants, in which these processes are carried on to their greatest extent, there is no such thing as inflammation. We are not aware that this distinction has ever been made before; and we would recommend to our readers the perusal of Dr. M.'s first chapter on the History of Inflammation, as an admirable specimen of the advantage of the study of comparative physiology to the pathologist, whose attention is directed to the effects of disease in man. It is well known that, in the inferior tribes of animals, as in plants, the powers of reparation exist to an extent, of which their effects in man can be regarded

but, as it were, the remnant.   In proportion as the different parts of the structure become more similar to one another, as in the articulated and radiated classes, does their dependence on each other become less; and in that most extraordinary creature, the hydra, or green polype, in which every part of the fabric seems but a repetition of the rest, multiplication of individuals by artificial division of one may be practised to almost an indefinite extent; the separated portions, not only of the body, but even of the tentacula, gradually developing themselves into perfect hydræ.   Now, if reparation takes place in such instances as these by a process of natural growth, in which inflammation is not at all concerned, we think it a fair argument that the same should be looked for in man; though an argument of *analogy* only is not one on which we are yet entitled to rely in physiology, if facts closely examined are in opposition to it.   But we shall find reason to agree with Dr. M. that the weight of these facts is really on his side; and in this instance, too, the analogy is really closer than might be supposed by a superficial observer; for, although the multiplication of individuals by the division, whether natural or artificial, of the original structure might seem to have nothing to do with the reparation of injured parts in the highest tribes, a little observation will show that the processes are essentially the same.   For, in the polypes, and others of the inferior tribes, we find every part of the structure capable of becoming a new individual.   In the radiata and higher articulata, there is very considerable power of reparation of lost parts; the star-fish, for example, acquiring new arms, and the crab or spider new claws; but these separated parts are not capable of becoming new individuals.   In the cold-blooded vertebrata, we still find a remarkable power of regenerating members, that, once lost in birds and mammalia, are seldom or never replaced: but, even in the latter, we find a capability of reproducing parts of the fabric that have been destroyed by disease or injury, really no less remarkable than that enjoyed by the lowest animals, since the processes concerned in it are of a still more complex nature: one of the most extraordinary of these is the reformation of a necrosed bone, and its gradual restoration from a shapeless mass to its perfect form.   The more closely the analogy is enquired into, the more perfect, we are convinced, it will appear to be. To these general observations we shall subjoin a few sentences from Dr. Macartney's chapter on the subject.

  "There is no reason for believing that a process of the same nature on inflammation exists under any circumstances in the vegetable kingdom. When *plants* are injured, or have a part of their substance destroyed, there is no new process of reparation set up, but the vacancy is filled by the regular and natural growth of the vegetable body. . . Animals that have no visible nerves, and those in whom the nervous system is very simple, exhibit none of the phenomena of inflammation . . . When *worms* are cut into two portions, the divided surfaces assume the disposition to heal from the moment the injury is inflicted. The edges of the wound approximate each other, and remain in close contact until they are perfectly healed, after which they recede to restore the tubular form of the animal. . . It does not appear that *insects* are susceptible of inflammation after injuries.   It is not known in what manner the poison generated by certain species of insects affects others of the same class; but it is quite certain that it does not cause inflammation as in quadrupeds and the human subject. When the spider inflicts a wound on a fly, it is instantaneously fatal; but when a sufficient quantity of the poison is not inserted into the

wound, it stupifies the insect, producing the effect of a vegetable narcotic poison.*
. . . The class *mollusca* do not seem to be capable of genuine inflammation. In some
of the *testaceous mollusca*, as the *oyster* and *muscle*, we find that some parts of the
body may die and putrefy, yet remain in connexion with the rest, and apparently not
affect it. The presence of an extraneous body will produce an exuberant growth of
the shell, causing a greater flow of the juice of which the shell is composed; and thus
the growth of pearls is perfectly similar to the excrescence of plants caused by the
gall insect. . . . In neither of the two classes of vertebrate animals with cold blood,
do I believe it is possible to produce the genuine effects of inflammation. In con-
ducting some experiments on the swimming bag of *fishes*, I was surprised to find that
the wounds made into the belly of the animals did not inflame. I was therefore
curious to know what injuries fishes would bear without producing inflammation.
Having taken some living fishes from the water, I introduced pieces of wire beneath
the skin and amongst the muscles of the body; the fishes were then returned to the
water, and on examining them several days afterwards, I found that no suppuration
had taken place. The tracts of the wounds were pale and smooth, and only mois-
tened with a serous fluid, and none of the usual appearances of inflammation were
visible. A very common occurrence in fishes is the existence of worms, which per-
forate the tunics of the alimentary canal, without producing any change of structure,
except an increased vascularity around the perforations. . . . I have never seen any
appearance of inflammation in *reptiles* after wounds or injuries. *Serpents* often lose
a portion of their tail; and although there is no attempt made for its reproduction, it
is very speedily cicatrised without inflammation. . . . In the class of *birds* we first
discover the existence of genuine inflammation as the consequence of external
mechanic injury; but the instances in which internal disorders become a cause of
inflammation, are very limited, and are nearly confined to febrile states, and par-
ticular epidemics. *Quadrupeds* are subject to inflammation, both from external
injury and internal disorders; they usually, however, show but little constitutional
sympathy with local disease. A dog or a horse will continue to eat, although
suffering from an accident or a disease that may prove fatal. The human being,
above all others, is disposed to inflammation; sometimes in consequence of the
slightest external irritation, and of various internal disorders. The nervous system
of the human subject is so complicated, that there is hardly a local affection with
which the constitution does not sympathise, nor any constitutional disturbance which
may not become the cause of local disease. The same susceptibility, however, com-
municates a power to the means we may employ for preventing or abating inflamma-
tory action, which does not belong to animals of inferior organization; and when by
these means we are enabled to remove the sense of injury sustained, or produce
a state of sensibility inconsistent with inflammation, the reparative processes go
on much in the same manner as in animals endowed with an inferior degree of
feeling." (pp. 1-6.)

From the class of facts of which we have thus given an outline,
Dr. Macartney draws the following inferences:

"That the powers of reparation and of reproduction are in proportion to the in-
disposition or incapacity for inflammation; that inflammation is so far from being
necessary to the reparation of parts, that, in proportion as it exists, the latter is im-
peded, retarded, or prevented; that, when inflammation does not exist, the repara-
tive power is equivalent to the original tendency to produce and maintain organic
form and structure; and that it then becomes a natural function, like the growth of
the individual or the reproduction of the species." (pp. 6, 7.)

* To this we may add, that the bee's sting seems to have a similar effect upon indi-
viduals of its own species. This is exemplified in the annual massacre of the drones,
and in the contest which often takes place between two queens: in the latter case, the
whole efforts of each combatant appears directed towards the insertion of the sting in
the body of the other.—Rev.

Agreeing, as we do, with Dr. Macartney in the inferences themselves, we must take leave to say that we do not regard the data on which they are *here* erected as sufficient to establish them. The mere difference between the state of the blood in warm and cold-blooded animals might, for anything we could *à priori* know to the contrary, create an essential variation in the character of the reparative processes in the two classes respectively. It will be only after we have ascertained, by experience, that these processes go on best in the former when the parts concerned are reduced to a condition resembling that in which they exist in the latter, that we shall have a right to say, that inflammation is in its very nature opposed to reparation. Another deficiency we must point out in Dr. M.'s argument, which has an essential bearing upon his *theory* of inflammation. Nearly all his statements are confined to the effects of mechanical injury; and although he may be quite right in saying that these are best repaired when inflammation is not excited by them, he has no right to assert, as he does, that inflammation never exists in vegetables or in the lowest animals. We are not, of course, to look in them for the same phenomena as those which present themselves in animals with warm blood and complex nervous system; but all vegetable physiologists are agreed, that phenomena corresponding with inflammation may be excited by certain irritants in the parts to which they are applied, or in distant organs if they are taken into the current of the circulation. This has been distinctly proved by the experiments of Drs. Turner and Christison on the effects of poisonous gases on vegetation;* and by those of MM. Macaire and Marcet on poisons applied in solution.† The irritant agents are found to have an effect quite opposite to that of narcotics, producing a temporary turgescence and rigidity of the parts, the vitality of which, however, is speedily destroyed by over excitement; whilst narcotics produce an immediate flaccidity and loss of irritability.

Dr. Macartney has very properly pointed out that Hunter, "in his inestimable work on inflammation, when describing the union by what is called the first intention, seemed aware of the possibility of wounds healing without any inflammatory action; he says, the union in such cases is without pain or constitutional disturbance, and 'proceeds as if nothing had happened;'" and that, in consequence of the apparent contradictions in different parts of his treatise, he "has been quoted as an authority for opinions directly at variance with those principles of physiology which it was the great object of his life to establish." Pathologists who consider themselves as belonging to the Hunterian school have assuredly substituted, in many instances, their own commentaries for the opinions of their master; and of this we shall presently adduce some striking illustrations. We shall now examine the doctrines put forth by Dr. Macartney on the reparation of injuries, and compare them with those of Hunter, and other pathologists at the present day. According to Dr. M.,

"Reunion and reorganization are effected in four different ways, which may be designated in the following manner:—*First*, immediate union without any intervening

* Edinb. Med. and Surg. Journ. Vol. 28.
† Ann. de Chimie, tom. xxix.; and Bibliothèque Universelle, tom. xxxi. See also Lindley's Botany, chap. xiii.

substance, such as blood or lymph. *Second*, the union by a medium of coagulable lymph or a clot of blood. *Third*, reorganization without any medium of lymph or granulations, the cavity of the wound becoming obliterated by a natural process of growth. *Fourth*, the reparation by means of a new, vascular, and organized substance, called granulations.

"To the first of these modes of cure, I should wish to give the name of *immediate*. The second may be called the *mediate by lymph or blood*. The third, being compounded of different actions, I find a difficulty in distinguishing it by a single name. It might be denominated the *approximating* or the *modelling* process of reparation, or that by a *natural growth*. The fourth mode of union should be termed *mediate by granulation*. The first three modes of restoration are quite incompatible with the presence of inflammation; a slight degree of which may, however, exist with the fourth." (p. 48.)

We confess to have our doubts how far the first mode of union, described by Dr. Macartney, can be legitimately regarded as distinct from the second. The following is his account of it:

"The circumstances under which immediate union is effected are the cases of incised wounds that admit of being, with safety and propriety, closely and immediately bound up. As no intermediate substance exists in a wound so healed, no mark or cicatrix is left behind. We have familiar examples of this mode of healing, in slight cuts received on the fingers, which, after being bound up, if no inflammation be induced, perfectly heal without the individual having any unpleasant sensation in the part, after the moment of the infliction of the wound." (p. 49.)

Now we cannot understand how union can take place between two divided surfaces without the medium of some solidified effusion, however small in quantity it may be. Although the illustration we shall employ is a rough one, yet it will, we think, have the merit of fidelity. The artisan who employs glue to unite two surfaces is perfectly well aware that the thinner the film of glue which remains when they are applied, the more firmly will his work hold together, the sooner it will set, and the better it will look. Now the solidification of the glue in this case answers precisely the same purpose, as far as mechanical union is concerned, with the organization of coagulable lymph; and it appears to us that, where the two surfaces admit of being brought into close apposition, the film effused between them will necessarily be of extreme tenuity; its entire organization will take place with proportional rapidity; and the traces of it will disappear most completely. Without such a film we cannot conceive that any union can take place; and Dr. Macartney does not offer any evidence, saving the rapidity of the union, and the absence of a cicatrix, against the usually-received doctrine of its formation. We have known, too, instances in which incisions that had apparently healed completely, in the manner here alluded to, burst asunder three or four days afterwards through an accidental tension of their edges; and it is evident that no organic union could have then taken place, the thin film of lymph still acting only as a glue.

The second mode of union is described by our author as follows:

"The union of parts with the medium of lymph or blood takes place in wounds which either cannot, from the extent or shape of their surfaces, be brought into perfectly close contact, or where the parts will not sustain much pressure, without the danger of inducing inflammation. The lymph which issues from the adjacent surfaces, in the first instance, glues them together, and in a few days is found to have acquired some vascularity, and an imperfect degree of organization; after which an external restraint for keeping the divided vessels in contact becomes unnecessary." (p. 50.)

Of this kind of union, the healing of the puncture made in venesection may be taken as a simple example. This may be healed with scarcely any intervening lymph, and with no consciousness on the part of the patient; but it leaves a line of white cicatrix, because it would not be justifiable to apply in this case the same degree of pressure as in the small cuts of the fingers, for the purpose of retaining the edges of the wound in close contact. According to the common opinion of British surgeons, an *adhesive inflammation* is required to effect this union; and the following passage, quoted by Dr. Macartney from Sir A. Cooper's Lectures on Surgery, may be regarded as an *ex cathedrâ* expression of this opinion in its broadest form. " Inflammation is a restorative process; no wound can be repaired without it; even the little puncture made by the lancet in bleeding would inevitably destroy life, if this salutary process did not prevent it." This, as we shall presently see, is an assertion which the teachings of Hunter by no means warrant. " I am well pleased," says Dr. M., " that the doctrine has been thus so clearly and unequivocally asserted, that no doubt can exist respecting the meaning of the author." The following are his general remarks upon it:

" Every one knows that, if the puncture of venesection be provoked to inflame, or in common language to fester, its progress towards healing is interrupted; yet this very wound has been quoted by Sir A. Cooper as an example of one requiring the aid of inflammation for its reparation. Those who contend for the necessity of inflammation in all cases for the reparation of injury cannot refuse to admit that, in the instances I have just mentioned, none of the phenomena ascribed to inflammation exist; and that whenever the surgeon intends to accomplish union by the first intention, his success will depend on his being able to keep the parts in so easy and tranquil a state, that none of the phenomena of inflammation make their appearance. If there be any degree of inflammation, in which there are no heat, redness, tumour, pain, or disturbed vascular action, it ought to be clearly distinguished from that kind which is attended with these phenomena, and then we should have two sorts of inflammation; the one with phenomena, the other without, which, if we chose to disregard the logical contradiction involved in such an admission, would amount to the same practical result as if on one occasion inflammation did exist, and on others did not." (p. 50.)

" Every surgeon knows that, if wounds united by means of lymph be provoked to inflame by motion, friction, too much constraint, or any other cause of disturbance, the tender and half-organized medium is destroyed, and the chance of union by the first intention is lost. We cannot, therefore, with any consistency, describe the adhesive process as an inflammatory one, when we perceive that it is interfered with by any sensible degree of inflammation." (p. 52.)

" It is well known that coagulable lymph may be thrown out by a natural and healthy action, as in the formation of the decidua uteri; that it is eminently conservative, in arresting hemorrhage from opened vessels; in the union of soft parts when divided; in forming the medium of conjunction of fractured bones, and in constructing the walls of an abscess and of an aneurismal sac. Immediately on the receipt of an injury, also, the lymph is shed before there is time for inflammation to set in. The surface of a wound that does not bleed is covered with a layer of lymph, in the very moment that the injury is inflicted. The inflammation which would ensue from the opening of a serous sac is sometimes altogether averted, and almost always restrained within certain bounds by the effusion of lymph uniting the opposed surfaces with each other." (p. 38.)

With the greater part of these views we entirely coincide; and a careful comparison of them with the original doctrines of Hunter will show that there is more resemblance between them than most of the disciples of the latter would be willing to allow. In the treatise of the latter is a

chapter of considerable length, which treats of *union by the first inten-tion;* and we here find a full description of the mode and circumstances in which this takes place, and a distinct and careful separation of its phenomena from those of inflammation.   The medium by which he regarded this union to take place is not essential to the question.   It is well known that Hunter considered the fibrin of a clot of blood as capable of becoming organized, and as forming the connexion in the instance in question; and on this point most pathologists of the present day are at issue with him.   Dr. Macartney seems to agree with him, however; as he states that he has seen vessels passing for a short way into a clot of blood covering the surface of an ulcer, when the coagulum possessed no vascularity of its own; and that he has succeeded in forcing injection into the coagula formed in the cavities of the heart after death, which presented the appearance of red elongated lines.   These consi-derations also lead him to believe that blood-vessels never *originate* in effusions of blood or lymph, but are prolonged into them from the neighbouring tissues.   On this question we have given our opinion elsewhere.

Surgeons of the present day, however, in abandoning the idea that an organized coagulum of blood ever becomes a medium of union, have altogether given up the notion of the true " union by the first intention," described by Hunter; and we accordingly find Mr. Palmer thus com-menting upon the chapter in question :

" It is now generally considered that *union by the first intention* and *adhesive inflammation* are essentially the same processes, modified by the degree of inflam-mation.   Union by the first intention is uniformly attended with some degree of pain and swelling, together with increased heat and vascularity, which, taken con-jointly, constitute the definition of inflammation. . . . There seems not the slightest reason for believing that the mechanism essentially differs by which naturally-con-tiguous parts morbidly adhere, and that by which artificially-divided parts unite from a principle of conservation; and yet all the phenomena of adhesion in disease uni-formly point to the presence of inflammation and the effusion of coagulable lymph." (*Palmer's edition of Hunter,* vol. iii, pp. 254, 268.)

We think that there is this essential difference—that inflammation is injurious to the process in one instance, and is the cause of it in the other.   The first is a physiological, the second a pathological action.   But we are anticipating another very important question raised by Dr. Macartney, to which we shall presently return.

The doctrine that the effusion of lymph for the reparation of the tissues is not to be regarded as an inflammatory process is by no means peculiar, however, to Dr. Macartney, nor does he claim for it any originality.   It is in fact as old as the time of Galen.*   John Bell main-tains that the term *adhesive inflammation* is inapplicable to this process, which he regards as purely physiological.   Maunoir, Delpech, Serres, Roche, and Sanson, and other pathologists of the physiological school, have adopted a corresponding opinion.   Even Hunter, to use Mr. Costello's words,† " in his division of inflammation into adhesive and suppurative, seems less anxious about entering into a disquisition as to the constant presence of inflammation for the production of adhesion than to mark the phases of the vital act that produces it.   The idea

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* See Cyclop. of Surgery, vol. i. p. 49.   † Op. cit. p. 50.

which he connects with this act is that of increased activity of the nervous and capillary systems, with augmentation of the plasticity, which, he is a witness, will often arise without pain, redness, heat, or swelling. The sense which he attaches to the term *adhesive inflammation* is that of an action in which the vessels become capable of secreting the plastic element; and in this Thomson, Cruveilhier, and almost all the pathologists of this country coincide." The question, then, as Dr. Macartney has already remarked in the passage quoted above, is more one of words than of facts; being, whether the term inflammation shall be used to denominate a state in which plastic lymph is thrown out, without sensible increase of heat, pain, or tumefaction; or whether it shall be restricted to conditions in which these manifest themselves. We certainly think, with him, that the precision, of which there is such a sad deficiency in medical language, imperatively requires the latter course, that confusion may be avoided. That increased vascularity cannot be regarded as of itself constituting inflammation is allowed on all sides; and if the natural process of the formation of the decidua uteri be regarded (which it usually is) as a non-inflammatory action, we see no great difficulty in extending the same principle to the reparative processes under discussion, which seem to us perfectly analogous. The human body, in its healthy condition, is possessed of the power of executing all the actions necessary for the maintenance of its own normal constitution, and for the production of new beings; and the processes which form a regular part of these can scarcely be regarded as abnormal. We have seen how closely in the lower animals the function of reproduction is connected with that of reparation; and that, in the highest classes, the degree of the latter power which is retained is to be regarded as a part only of the former. There is an essential distinction, then, both in character and in phenomena, between actions of this kind and the diseased conditions to which, at first sight, they assimilate.

" But," we can imagine many of our surgical brethren thus objecting to such a doctrine, " every practical man knows that there are many states of the constitution in which wounds will not unite, owing to deficiency of inflammation; we see their edges pale and flabby; and as soon as they become red and tumefied, union begins to take place." These facts, however, are susceptible of a somewhat different explanation. Every one knows that there are conditions of the system in which the blood, from various causes, is deficient in perfectly-elaborated fibrin, and is indisposed to coagulate. It is in such that spontaneous hemorrhages are most apt to occur; and it is in such also that wounds are least disposed to unite. That a deficiency of fibrin in the blood will produce this indisposition has recently been proved experimentally by M. Magendie.* Now, in inflammatory conditions of the system, there is a tendency to increase in the quantity of fibrin in the blood, so that its viscidity is increased and its coagulum becomes larger and firmer; and a similar change seems to be produced by the local action of the vessels on the blood circulating through an inflamed part. Although, therefore, inflammation, supervening in a healthy state of the system, may be injurious to the reparative processes, and may prevent their regular occurrence, it seems to

* Leçons sur le Sang.

us quite easy to comprehend that, when the system is below par in the condition required, a slight degree of inflammation may be salutary. We are well aware that whatever explanation of this fact, to which we think that he ought to have alluded, might be given by Dr. Macartney, it would be different from that which we have offered; since *he* does *not* regard the effusion of plastic lymph as *ever* a consequence of inflammation. So far as we have yet advanced, it will be seen that we coincide entirely in the opinions of Professor Burns,* from whom we shall quote a passage that seems to us to contain the essence of the question. "Reunion of parts by the process of adhesion is neither more nor less than the reestablishment of the natural function of nutrition, over surfaces in a state of apposition. It is a natural process, existing, however, in a forced or excited degree, and going on also in a state of progressive perfection. . . . That adhesion may follow inflammation, we have already seen, and shall again notice; but that it is in its ordinary form a species of inflammation, I cannot admit. . . . Even when accompanied with its highest excitement, and attended with its most vivid and highly-marked phenomena, it is not inflammation: as well may we call blushing inflammation, because it is attended by heat and redness; as well may we call heartburn inflammation, because it is attended by sensation; as well may we call pregnancy inflammation, because there the uterine vessels enlarge and deposit new matter. Inflammation is an action productive of a complete change of the natural condition. It is new in its nature, it is connected with an altered texture, it is an action of disease, tending rather to disorganization than preservation; a condition which may, indeed, stop short of destruction, but which also may proceed through every degree of change and injury to utter ruin. The action, on the other hand, attendant on adhesion, is limited in its degree, not merely the most effectual enemy to inflammation, but absolutely incompatible with it; a sure and certain plan for the restoration of the part, and the security of the system."†

With regard to the nature of the process concerned in the effusion of plastic lymph, it appears to us that Dr. Macartney, and those pathologists who profess to be of the school of Hunter, have erred in two opposite extremes. The latter assert that, because coagulable lymph is thrown out from certain surfaces in a state of inflammation—which lymph, by becoming organized, produces adhesion between the surfaces—adhesion is always the result of inflammation: and Dr. Macartney argues, on the other hand, that, because wounds may unite by a medium of organizable lymph, without inflammation, the effusion of that lymph is in no circumstances to be regarded as a consequence of inflammation. This, at least, appears to us to be the drift of his argument; but we must confess that we cannot understand the grounds on which he speaks of this action as a "reputed" consequence of inflammation, rather than a real one. Both parties seem to us to have laid too much stress on the supposed final causes of particular processes. The out-and-out Hunterians maintain that inflammation has an essentially beneficial tendency; and

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* Principles of Surgery, vol. i. p. 383. 1831.

† We cannot but feel surprised that these very philosophical views, published several years ago, should have excited so little attention amongst pathologists; and especially that no notice should be taken of them in the article "Adhesion," in the Cyclopædia of Surgery.

that, wherever reparation takes place, it is in consequence of that ten-
dency being called into action. On the other hand, Dr. Macartney
assumes, as it appears to us, that the effusion of coagulable lymph has
always a reparatory or protective purpose, and that it is *therefore* essen-
tially distinct in character from inflammation, which is a morbid condi-
tion, and always injurious. He allows that the adhesions which are formed
in consequence of it are frequently injurious, and may even be fatal. But
" because evils occasionally result from the adhesion of parts, we are not
therefore to conclude that the effusion of lymph is an inflammatory action ;
or that the union and reorganization of parts are not, in general, sa-
lutary." But we must protest against this mode of reasoning upon facts.
The question is, are there instances in which the effusion of coagulable
lymph occurs without any external excitement, but as a consequence of
inflammation, and of inflammation only ? We believe that there are but
few pathologists who would hesitate in answering this question in the
affirmative. We have already expressed our full acquiescence in
Dr. M.'s doctrine, that, in the reparation of injuries, the effusion of
lymph is to be regarded as a non-inflammatory or physiological process;
and we are not altogether disinclined to go further, and to admit that it
may, when thrown out under particular conditions on serous surfaces,
be regarded as a protective process in which inflammation is alike un-
concerned. But here we must stop; since we cannot see that any but
the most distorted mode of reasoning can ever demonstrate that the effu-
sion of lymph during spontaneous inflammation of serous membranes,
mucous surfaces, cellular tissue, &c. is not as completely a result of that
process as the effusion of serum or pus. We have in inflammation of the
iris an opportunity of watching its various stages; and it is not unfair to
conclude that, where the symptoms correspond, and the tissues con-
cerned are analogous, the process is similar in other membranes whose
situation debars them from being inspected during life. In acute inflam-
mation of the iris, every surgeon knows that all the symptoms of inflam-
mation are developed before effusion takes place; and that, just as in the
case of the arachnoid, the pleura, or the peritoneum, the effusion may be
fibrinous or purulent, according to circumstances, though most frequently
the former. The influence of treatment, also, is another important con-
sideration; and it is universally found that, to prevent adhesion in this
and other cases, those means are most efficacious which subdue the in-
flammation. It would be easy to multiply illustrations of this kind; but
we do not imagine that many of our readers will be at fault for them.
We will only stop to point out that the view we have taken accords better
with teleological principles than either of those from which we dissent;
since adhesion, when it occurs without inflammation, but as a result of
physiological action, may always be regarded as sanative; whilst, if it
result from inflammation—a diseased condition—it is as uniformly in-
jurious.

To Dr. Macartney is certainly due the credit of pointing out the *ra-
tionale* of an occurrence not previously unknown to practical surgeons,
but which had never been referred to any general principle,—namely,
the union of open wounds without granulation and suppuration. We
shall therefore give his account of this process without abridgment.

" The mode of reparation by the modelling process has never been described ;

because surgeons, heretofore, did not know that it was possible for open wounds to heal without inflammation in the higher classes of animals. However, when healthy parts are injured, although it may be to the greatest extent, if placed under the most favorable circumstances for carrying on their natural actions, the process of reparation is nearly the same, even in the human subject, as that which I have described as belonging to animals of a simple structure. The pain arising from the injury soon ceases. No tumefaction ensues, separating the edges of the wound, and its surfaces are not only disposed to lie in contact, but even to approach each other so much that they cannot be kept asunder by mechanic restraint: there is, therefore, no necessity for the effusion of lymph; and, as there is no cavity to be filled up, granulations are not formed. The surfaces of the wound, although they come into contact, do not unite by vessels shooting across; they are smooth, red, and moistened with a fluid, which is probably serum, and present the appearance of one of the natural mucous surfaces of the body. If any parts have been killed by the injury, they are separated by simply as much interstitial absorption as is sufficient to set them free. The wound is finally healed by the same means which determine the shape of the natural parts of the body. It gradually diminishes in extent until it is obliterated; or it may be cicatrized before the surfaces are abolished, after which the same process of natural growth goes on, until no part of the original wound is left. The cicatrix which succeeds the cure of injury by the modelling or growing process is small, pliant, free from those callous adhesions to the parts underneath, and the morbid sensations that so often belong to those cicatrices, which have for their bases the deposits of lymph, or the new-formed structures called granulations. When the modelling process, or cure by the natural growth, goes on perfectly, there is no inflammation in the part, and the patients are so entirely free from all uneasy sensations, that I have known instances of their being ignorant of the real site and extent of the injury, until they had examined the part with their hand or saw it with a looking-glass. It might be anticipated that, as this mode of reparation bears so strong a resemblance to the natural formation and development of parts, it is the slowest mode; but this is of little account when compared with its great advantages in being unattended with pain, inflammation, and constitutional sympathy, and leaving behind it the best description of cicatrix. It constitutes the nearest approach, in the higher classes of animals, to that regenerative power which is exhibited by some of the inferior tribes." (pp. 53-4.)

We have said that surgeons have not been altogether ignorant of the possibility of this mode of reparation. It is evidently that which often takes place under a clot of blood, when the constitutional state and the condition of the parts are favorable. In Hunter's treatise we find a section of the chapter on Union by the First Intention devoted to the consideration "of Scabbing;" and, from the description he gives of the process, it is quite evident that his views of it were not really very dissimilar from those of Dr. Macartney.

"Even where the parts are not brought together, so as to admit of union by the first intention, nature is always endeavouring to produce the same effect. The blood which is thrown out in consequence of the accident, and which would have united surfaces brought into contact, is in part allowed to escape, but, by its coagulation on the surface, a portion is there retained, which, drying and forming a scab, becomes an obstacle to suppuration. The inflammation in this case may be greater than where union can be effected, but not nearly so great as when suppuration takes place. This might be considered as the first mode of healing a wound or sore, for it appears to be the natural one, requiring no art; and, in the state of parts before mentioned, the complete union is in some degree indebted to this mode of healing, by uniting the edges that were not or could not be brought into close contact, by means of a scab: proper attention to this has, I believe, been too much neglected. Many wounds ought to be allowed to scab in which this process is now prevented; and this arises, I believe, from the conceit of surgeons, who think themselves possessed of powers superior to nature, and therefore have introduced the practice of making

sores of all wounds.   .   .   .   .   How far this practice may be extended is not yet ascertained. A small wound doing well under this treatment is a common case, and some examples of large wounds are mentioned, though these do not so generally succeed; but I do not know that there is any danger in the attempt." (*Palmer's Edition of Hunter*, vol. iii. pp. 262-3.)

To the last sentence of this passage, Mr. Palmer subjoins the following illustration:

" Mr. Wardrop, in his Lectures on Surgery, has related a very remarkable case, in which ' the largest wounded surface' he ever beheld, arising from the ablation of a diseased breast, almost entirely healed under a crust of blood, which remained on the surface of the wound for upwards of thirty days; the process of granulation,* approximation of the edges, and cicatrization of the wounds going on underneath, with scarcely any irritation or inflammation of the adjacent integuments."

Artificial coverings of the same kind have been recommended by many practitioners in the cure of ulcers; and the account recently given by Dr. Greenhow† of his success in treating burns, not only superficial but deep, by entirely excluding them from the air, evidently corresponds with that of Dr. Macartney. The plan was suggested to Dr. G. by an accident. A boy fell with both his arms into a kettle of boiling pitch, which glued the sleeves of the jacket so firmly to the arms that the attempt to remove them was abandoned in despair. The hands, which were cleaned and treated in the usual way, suppurated copiously, and sloughs separated; but, a month before they were entirely healed, the jacket sleeves became detached from the arms, and, on their removal, the surface was found perfectly healed, although it was evident that sloughs had come away, and although there had been no suppuration, no offensive smell; nothing, in fact, to indicate that any process was going on. By artificially imitating this coating by means of a resin ointment applied in a liquid state, Dr. G. has been able to obtain similar results in subsequent cases; suppuration never taking place except from accidental causes, and the sloughs, where the parts were deeply injured, peeling off like pieces of shrivelled leather, as the surface skinned beneath them. The advantages of this mode of healing burns are most evident. The system is saved from the constitutional irritation which a large suppurating surface necessarily keeps up, and which so frequently leads to a fatal result; and the cicatrices, if such they are to be called, resemble the natural surface both in appearance and character; and none of those contractions take place of which every practitioner has to regret the occurrence under ordinary modes of treatment with the best management.

We have alluded to these facts more at length than may appear necessary, partly because Dr. Macartney has not taken such notice of them as they seem to demand, and partly to show that the doctrine which he has brought forward on reparation by the "modelling process" is perfectly conformable to the experience of the profession. Dr. Greenhow speaks of this mode of healing as " by the first intention;" which plainly shows that, in his mind, it is distinct from inflammation. We cannot altogether concede to Dr. Macartney, then, the merit of first directing

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* Although Mr. Wardrop here speaks of *granulation*, it is evident that he did not *see* it; but that he only supposes the process to have taken place, because he was not aware that open wounds could be filled up in any other way.

† Medical Gazette, October 13, 1838. (See p. 287 of our present Volume.)

attention to this process, since such evident notice of it has been taken by Hunter and by practitioners of the present day. He scarcely alludes, in fact, to the nature of the scabbing process; and leaves us in doubt as to what he considers the mode of union in such cases to be. But we gladly give him the credit of having explained the *rationale* of this mode of reparation, by showing its analogy to the reparative process in the lower classes of animals, in which inflammation is certainly not concerned; and of pointing out the principles of treatment by which this most desirable end may be attained in a great variety of cases. This is one of the grand improvements which are gradually elevating surgical pathology to the rank of a science, and which will gradually render practice a scientific and not an empirical art.

We should be sorry for our readers or for Dr. Macartney to think that in our previous remarks we have been directed by a spirit of depreciation. Our only aim is the establishment of truth; and, whilst none can take greater delight than we do at the success of any attempt to reduce under general principles a chaotic mass of empirical facts, we still feel that these facts are not to be despised; since from them may be deduced valuable rules of treatment, of limited application indeed, but which have still been found capable of leading to a successful result in cases in which they have been judiciously practised. And, as another instance of the same approximation, on a limited scale, to Dr. M.'s general principles, we may advert to Mr. Syme's plan of treating wounds by water-dressing, and such other means as tend to abate instead of arousing inflammation.*

To effect the reparation of injuries by the approximating or modelling process, when direct union is inadmissible, is the object of Dr. Macartney's treatment, to which we shall presently recur; but, to set the nature and advantages of it in a clear light, we shall quote a case which he gives in illustration of its effects compared with those of the usual method.

  " Mr. O—y was directing a labourer to drive a stake into the ground with a heavy mallet: the man, mistaking what was said to him, struck down the mallet with great force, before his master's hand was removed from the top of the stake. The blow crushed the forefinger, and laid it open from one end to the other. The gentleman, being acquainted with my mode of treating such injuries, and being in possession of the steam apparatus invented by me, placed his hand under the influence of steam, which speedily removed all pain, and he afterwards applied the water-dressing. The wound went on towards a cure, in the manner I have described under the name of the approximating or modelling process. No granulations were formed, nor pus generated. The edges of the wound came together, and presented the appearance of a red, smooth fissure. He was now told by a surgeon that union would not take place without the aid of adhesive plaster; on which, he consulted me respecting what he should do. I advised him (in order to satisfy him) to try the effect of putting a piece of adhesive plaster around the middle of the finger, and to continue the water-

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* It has been insinuated, in a recent review of Dr. Macartney's work, that Mr. Syme's Principles of Surgery " contains the major part of Dr. Macartney's peculiar ideas upon inflammation," taken without acknowledgment from Dr. Macartney's Lectures. We cannot but consider this accusation as altogether unjust, as any one may convince himself who will take the trouble to compare the work in question with the doctrines of Dr. Macartney. Mr. Syme's paper on the union of wounds was published in the year 1825 ; not so very long, therefore, after Dr. Macartney was appointed to the Dublin professorship. The treatment there recommended is obviously based on the author's experimental results, and not on any general principles like those enunciated by Dr. Macartney.

dressing to the remainder. He followed this direction, and in two days after, the wound opened under the plaster, the skin inflamed round the part, granulations shot up in that portion of the wound, and pus was secreted. The gentleman was now convinced of his error. He returned to the water-dressing, under which the granulations that had formed faded, the secretion of pus declined, the inflammation which had been produced by the plaster subsided, and the wound healed without further trouble in the manner that I had intended. After cicatrization took place, the surfaces of the wound gradually rose to the level of the surrounding skin: he finally recovered the perfect use of his hand, and no appearance of the injury remained except a mere line of white cicatrix, which only possessed hardness at that part where the adhesive plaster had been applied, and a little below it next the palm of the hand. The two extremities of this wound were healed in ten days after the accident; and the middle, to which the plaster was applied, in seven days afterwards." (pp. 212-13.)

The last mode of reparation admitted by Dr. Macartney is that by granulations, the growth of which he regards (very justly, we think,) as not in itself an inflammatory process, but as the means of reparation employed by nature under the unfavorable circumstances of irritation or the continuance of inflammation; proving that parts previously in a healthy state are disposed to heal in despite of many impediments thrown in their way. The following extracts present his view of the nature of the process.

" It would appear that the granulation structure, being endowed with more vascularity and a higher degree of organization than can be acquired in a short time by effused lymph or blood, is the reason of its being formed for the purpose of reparation, when the parts are placed under unfavorable circumstances to accomplish a cure; for we find that, if lymph or blood be shed on a common ulcer by incisions of its surface, and perfectly inclosed so as to avoid all external irritation, and kept in an easy state of sensation [?], it unites with the surfaces of the ulcer, and acquires organization, as when the same substance is shed in common wounds. The existence of granulations has been supposed to be necessary to fill up deficiencies: this, however, is not the correct explanation; for we meet with very considerable vacancies filled with lymph, which is never converted into granulations; as in the cases where recent incised wounds are imperfectly closed, but nevertheless are healed by the first intention. The necessity for the granulative process seems entirely to arise from the parts being in that degree of excitement which is not enough to prevent reparation altogether, but to permit it to be effected by a highly vascular medium. . . . And, further, it is only in the beginning that granulations take the place of the natural structure; for the approximation of the edges of a wound or of an ulcer is accomplished by the interstitial absorption; and, finally, wounds that are healed by the granulative process exhibit no more remains of the new medium employed for union than if lymph had been the substance employed. Granulations, therefore, exist for a special purpose; and, that being effected, they cease to occupy the place of the original structure longer or more than is necessary. The ultimate absorption of the granulations is something like the contracting or approximating action which exists in open wounds that have never inflamed; and it does not take place until the inflammation has subsided in a common wound or ulcer.

" The organic structure of granulations is very peculiar: although easily destroyed by injury or a high degree of inflammation, it is endowed with important vital properties. A deposition of lymph, after being united to an exposed surface, as in an ulcer, or in the interior of an abscess, may assume the granulation structure; but the usual manner in which it is formed is by deposition and organization going on together, as in the growth of the natural parts of the body. In whatever mode granulations are produced, they are composed of a fine cellular membrane, into which bloodvessels proceed from the subjacent tissue. . . . In the indolent ulcer the surface

is not granular, but depressed, hard, striated, and is nothing more than very imperfectly organized lymph." (pp. 56-7.)

Now, the state of the case appears to us to be this: In union by the deposition of lymph, the reparative matter is deposited unorganized, but in a state capable of becoming organized, which it speedily does, if the condition of the neighbouring parts be favorable.   In the modelling process, no deposition takes place, but the reparative materials are applied to the extension of the original tissues.   But when the inflamed state of the adjoining tissues and fluids prevents either one of these processes from taking place in a perfect manner, a new substance is formed, which is not capable of ever becoming sufficiently organized to form part of the general structure, although the properties with which it is endowed have an important temporary object.   It is evident that, in one sense, the formation of granulations may be spoken of as an inflammatory process, since it is a result of the abnormal condition of the neighbouring parts; but we think that it may be more fairly represented as a perversion or distortion of the natural reparative processes induced by this condition.   All are agreed that, without the presence of a certain amount of inflammation, granulations do not appear; and that this inflammation is unfavorable to the final cicatrization of the wound, when an extension of the cutaneous surface takes place over the newly-formed tissue, few can help acknowledging who reflect upon the diminished vascularity that is always evident in the neighbourhood of the wound, and especially at its edges, while the process of cicatrization is taking place.   In fact, as Dr. M. has justly remarked, "when the granular structure is prepared by the cessation of inflammation, the mode of healing bears a strong resemblance to that which takes place when open wounds are cured without inflammation having occurred." (p. 62.)

We have already considered one of the processes regarded by Dr. Macartney as erroneously classed among the consequences of inflammation; namely, the effusion of plastic lymph.   We shall now briefly advert to another, ulceration.   Every one who has read Hunter's treatise, or who has heard it expounded, (and what well-educated surgeon has not?) must remember that he nominally treats of ulceration as a consequence of "ulcerative inflammation."   But a closer examination of his descriptions will show that he entertained a very different notion of the process from that which such a designation might reasonably suggest to the minds of others.   He distinctly states that ulceration is produced by an action of the absorbents, resembling that which introduces aliment into the system; the *disposition to be absorbed* being given, in the cases in question, by a previous state of irritation and inflammation.   The following passages will unequivocally show this to be his opinion:

"The dispositions of the two parts of the living body which absorb and are absorbed must be of two kinds respecting the parts, one passive and the other active. The first of these is an irritated state of the part to be absorbed, which renders it unfit to remain under such circumstances, the action excited by this irritation being incompatible with the natural actions and the existence of the parts, whatever these are, which therefore become ready for removal, or yield to it with ease.   The second is, the absorbents being stimulated to action by such a state of parts, that both conspire to the same end. . . . .   Absorption in consequence of disease is the power of removing complete parts of the body, and is in its operation somewhat similar to the

modelling process, [that by which the natural form of the body is preserved, or altered in the stages of its growth,] but very different in the intention, and therefore in its ultimate effects.   This process of removing whole parts in consequence of disease, in some cases produces effects which are not similar to one another: one of these is a sore or ulcer, and therefore I call it ulcerative.   In other cases no ulcer is produced, although whole parts are removed, and for this I have not been able to find a term; but both may be denominated progressive absorption.   .   .   .   The process of the removal of parts of the body, either by interstitial or progressive absorption, answers very material purposes in the machine, without which many local diseases could not be removed, and which, if allowed to remain, would destroy the person.   It may be called in such cases the natural surgeon." (*Palmer's edition of Hunter*, vol. iii. pp. 465, 461, 463.)

We believe the fact to be, that Hunter felt encumbered by the term " ulcerative inflammation," the use of which among surgeons of his time was the consequence of their erroneous notion that the breach of substance was occasioned by the dissolution of the tissues into pus; a notion of which Hunter demonstrated the fallacy.   It is evident, then, that Dr. Macartney differs but little from Hunter in the character he assigns to ulceration; but we shall again state his opinion in his own words. After pointing out the concurrent agency of the arteries and absorbents in the natural growth of the body, he adverts to the operation of the latter in the removal of extraneous substances and in the imbibition of aliment.   He then continues,

" There is no essential difference between the most salutary actions of the absorbents and the most destructive ulcerations: in all cases these vessels are governed by the same law, which is to remove parts that are not necessary or not fit to remain. There is every reason to believe that ulceration always takes place, because the vitality or the organization of the parts have been impaired by inflammation, weakness, pressure, or other external injuries. All new-formed parts and morbid growths are peculiarly subject to ulceration on the slightest provocation, because their vital powers are low, and their structure imperfect: hence cancer, fungous and medullary tumours, are sometimes rapidly destroyed by phagedæna or by slough.   The structure in which scrofulous deposit exists is liable, on slight excitement, to set up the ulcerative process.   The inferior parts of the body, as they have less vital power than the upper, are most frequently the seat of ulcers.   As we see that the process of ulceration, in so many cases, is palpably intended to remove parts which are first rendered incapable of performing natural and healthy actions, we have a right to assume that there is no instance of parts ulcerating whose existence is necessary, and whose structure is quite sound.   [In cases where the structure is sound, but the existence unnecessary, we have atrophy, without breach of continuity, produced by interstitial absorption, unbalanced by deposition.]   If this view of the nature of ulceration be correct, it is of the greatest practical importance, as it would instruct us to address our remedies to the causes of ulceration, by which the effect may be often rendered unnecessary." (pp. 42-3.)

We do not see that there is much novelty in these remarks, since, as far as our experience extends, intelligent practitioners have long been in the habit of acting upon them; but we gladly concede to Dr. Macartney the credit of having placed the real nature of the ulcerative process in a striking and self-evident light; and, taken in connexion with his doctrines on the subject of reparation, the physiological character (so to speak) of both is, to our minds, satisfactorily made out. Adverting to the designation " natural surgeon," applied by Hunter to the ulcerative process, he remarks,

" I should be disposed to apply the same name both to the effusion of lymph and the process of absorption. The one acts like the surgeon that unites parts, the other like the one who removes them because they are not fit to remain; and it would not appear more justifiable to call adhesion and ulceration inflammatory processes, than to consider the operations of surgeons themselves as particular modes of inflammation." (p. 44.)

The injury to the organization and vital properties of parts, which renders them unfit to remain constituents of the fabric, and occasions them to be thrown off *en masse* by mortification, or to be removed by the ulcerative process, is an undoubted consequence of inflammation.

We shall now briefly advert to the *treatment* recommended by Dr. Macartney for the purpose of giving full effect to the powers of nature in the reparation of injuries, by preventing or subduing the inflammatory action which is so injurious to them. This principally consists in the careful regulation of temperature, and the constant application of moisture. The immediate effects of injuries, especially of such as act severely upon the sentient extremities of the nerves, are, according to him, best abated by the action of *steam* at a high but comfortable temperature, the influence of which is gently stimulant, and at the same time extremely soothing to the feelings of the patient. When the remedy is used immediately after severe injuries, especially those accompanied with a peculiar overcoming pain and a shock to the nervous system, " it removes all pain and consciousness of injury in a very short time." Its stimulant action is seen by its operation on ulcers healing with luxuriant granulations, which it makes tender, painful, and liable to bleed; and it does not, therefore, seem evident why it should have such a soothing influence in wounded surfaces; but its *modus operandi* in improving the condition of indolent ulcers can be easily comprehended. After the pain and sense of injury have passed away, the steam, at a lower temperature, may be continued; and, according to Dr. M., no local application can compete with this when inflammation is of an active character. For assisting the reparative process, however, water-dressing will generally answer sufficiently well; its principal object being the constant production of a moderate degree of cold, which diminishes but does not extinguish sensibility and vascular action, and allows the reparative process to be carried on as in the inferior tribes of animals. The reduction of the heat in an *extreme* degree, as by the application of ice or iced water, is not here called for, and would be positively injurious; since it not only renders the existence of inflammation in the part impossible, but, being a direct sedative to all vital actions, suspends also the process of reparation. Dr. Macartney gives a faithful history of the employment of water as a curative application to wounds from the earliest ages, which he thus concludes:

" It is quite manifest, from the history I have given of the employment of water in its liquid state for the cure of wounds and inflammation, from the earliest period to the present time, that I do not claim the discovery of the remedy; but that I have been the means of introducing it to the attention of the profession in these countries is a matter of too much notoriety to admit of dispute. I have also connected the use of it with general views on the nature of inflammation, which (whether right or wrong) are peculiarly and distinctly my own; and I have demonstrated the possibility of open wounds healing without inflammation, and without the medium of either coa-

gulable lymph or granulations; a fact which, as far as my information extends, has not even been hinted at by any writer on surgery, either ancient or modern." (p. 189.)

We do not think that, on the whole, Dr. Macartney here assumes too much to himself; and he has shown himself so free from the egotistical spirit which possesses some of our claimants to modern discoveries, that we should be doing him injustice did we not accord to him, with the trifling exceptions we have already mentioned, all that he claims regarding the exposition of the *rationale* of the reparative processes, and the enlarged views we have thus obtained as to the application of curative means.   We are unwillingly compelled to defer until another occasion the consideration of the subject of inflammation itself, having, in this, our first article, occupied our prescribed space with the discussion of preliminary questions; of which, however, no one will deny the importance.   We have not entered into a minute description of Dr. Macartney's mode of treating injuries, partly because we have on a former occasion* called the attention of our readers to the value of cold water in the treatment of injuries; and partly because we consider it but fair towards Dr. M. not to prevent the necessity of reference to his work. This reference we would strongly urge our readers to make; and it must be acknowledged that a condemnation of his treatment will be decidedly unjust until it has been fairly tried, with all the precautions that he recommends.   We cannot, perhaps, quite go the whole way with him in asserting that the practice founded on his doctrines " is at present established too extensively, and confirmed by the experience of too many individuals, to admit of controversy;" but we may safely say that, in a great variety of cases, no doubt as to its efficacy can exist in the minds of those who will fairly weigh the evidence in favour of it; and that these cases are of a nature in which efficacious treatment is of the highest importance for the preservation of life or limbs.   We more especially allude to severe injuries involving the joints, and gunshot and extensively lacerated wounds.   In so far, therefore, as he has been instrumental in thus alleviating human suffering, he well deserves the gratitude not only of the profession, in whose science he has made an important advance, but of mankind at large.

Art. VI.

Guy's Hospital Reports.   No. VI. and No. VII.   *April—October,* 1838.   (Vol. III.)—*London.*   8vo. pp. 479.

The sixth Number of this most valuable publication opens with an Introductory Address, by Dr. Barlow, in which he glances with justifiable complacency at the progress which the work has already made in the good opinion of the medical public; and reverts to the fact, highly creditable to the medical school of the great hospital from which it emanates, that no inconsiderable portion of the materials of the publication is furnished by the clinical pupils.   The habits of close observation, and the stimulus to methodise and record what has been observed, which naturally result to

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* British and Foreign Med. Review, Vol. III. p. 114 et seq.

the students from being thus honorably admitted to participate with their teachers in contributing their labours towards a work of such high practical aims, cannot fail to operate beneficially on their future careers. In this, as in a thousand other instances, we mark with pleasure the vast improvement which is going forward in respect to that which is, after all, the essential business of medical education,—we mean clinical instruction. It is only those who, like ourselves, recollect the general state of knowledge amongst the yearly pupils of some of the great London hospitals some years ago, and the kind of anti-reciprocity feeling which, in too many instances, existed between the teachers and the taught, who can fully appreciate this improvement.

Much, however, as we rejoice at the share which the pupils take in furnishing the rough materials, we trust that the gentlemen who are individually responsible for the form and character of each monograph, will ever, as well from respect to their readers as to themselves, steadily keep in mind the necessity of careful selection and condensation on their part, if they would give to the publication all the value of which it is susceptible. To young practitioners, and indeed to all, of whatever age, whose field of action does not afford the benefit of clinical instruction on a large scale, such a work as the present must prove quite invaluable; nor can we conceive any professional standing so advanced as to justify the reception of a publication, emanating from individuals of such acknowledged ability and experience, with indifference.

A knowledge of the difficulty there is in effecting the cooperation and commanding the continued zealous exertions of several individuals in any joint literary production, made us, we confess, apprehensive as to the possibility of the Guy's Hospital Reports permanently sustaining themselves at the high level they had already reached: the contents of the present and of the immediately preceding Numbers, however, go a long way towards assuaging such fears. May they have successors innumerable of equal merit!

We think we shall best evince our high sense of the importance of this volume by noticing separately each of its numerous articles.

I. *On Spermatocele, or Varicocele of the Spermatic Cord.* By Sir Astley Cooper.—The excellent author prefaces his communication with an account of the causes, symptoms, and diagnosis of varicocele; but, as these have been already published in his valuable works, we are relieved from the necessity of reprinting them. After an exposition of the means of cure usually adopted, he speaks of that lately recommended by Mr. Wormald in the following terms: "It has been advised to draw the scrotum through a ring, and fix it there; but, as it may be readily believed, this has no advantage over the sling support; and is a much greater annoyance to the patient's feelings, either than the disease itself or the bandage which he is called upon to wear." Sir Astley's method (which is new) consists in the removal of a portion of the skin of the scrotum by the knife. The operation is neither painful nor does it excite constitutional irritation. The mode of performing it is as follows:

"The patient being placed in the recumbent posture, the relaxed scrotum is drawn between the fingers; the testis is to be raised to the external ring by an assistant, and then the portion of the scrotum is removed by the knife or knife-scissors; but I prefer

the former. Any artery of the scrotum which bleeds is to be tied; and a suture is then made to bring the edges of the diminished scrotum together. The patient should be kept for a few hours in the recumbent posture, to prevent any tendency to bleeding; and then a suspensory bag is to be applied, to press the testis upwards, and to glue the scrotum to the surface. The only difficulty in the operation of removing the scrotum by excision is in ascertaining the proper quantity to be removed; but it adds but little to the pain if a second portion be taken away, if the first does not make sufficient pressure on the spermatic cord. It is of no use to remove a small portion of the scrotum, for, from doing this, I have failed. When the wound has healed, the varicocele is lessened, but not always entirely removed; but the pain and distressing sensations cease, if sufficient of the scrotum be removed. In making the suture in the scrotum, its lower part is to be brought up towards the abdominal ring, to raise and support the testis: as does the suspensory sling when it is worn." (p. 9.)

In one case operated on, the portion of scrotum removed measured four inches in length, and two inches and a half in breadth. This gentleman is now able to ride fifty miles a day without inconvenience; although, before the operation, he could not continue on horseback more than two or three miles.

In another case, Sir Astley's assistant held the scrotum between his fingers, and he removed all that could be easily elevated from the testis and its coverings. "The patient soon gave up the use of the sling support, and lost the pain in the spermatic cord and loins which he had previously sustained."

Five successful operations of this kind have been performed within the last year and a half; and, in order to confirm the value of the improvement, it only remains to be told how long these persons may continue well. Sir Astley's proposition is founded on rational principles: the reparative powers of the scrotum, when half destroyed by gangrene, as in cases of erysipelas, &c. and the effect of the healing process in such cases, in drawing the testicles close up to the abdomen, making thereby a sort of natural suspensory bandage, have often struck us as provisions of nature, the operation of which might be applied with advantage to the improvement of the *surgery* of these parts; and now, that Sir Astley has succeeded, we only wonder at our own stupidity in not having long since thought of so obvious a remedy for the disease in question: but this eminent surgeon has often had the singular felicity of applying at once to practice what others would spend half their lives in thinking about.

In respect of the after-treatment, Sir Astley speaks, perhaps, too lightly. He says, "the patient should be kept for a few hours in the recumbent posture, to prevent any tendency to bleeding." Such, however, are our notions regarding the tendency to œdema of the scrotum from the most trifling inflammatory affections, and the danger of a failure of adhesion consequent thereon, that we are determined, on our first trial of this operation, to confine the patient to bed or the couch until the period of such dangers has passed away.

The concluding observations of the distinguished author should be always borne in mind.

"I wish it," he says, "to be recollected that I only recommend a removal of a portion of the scrotum in those cases of spermatocele in which the patient suffers great local pain; in cases in which he is most urgent to have the swelling and deformity of the part removed; and more especially in those instances in which the function of digestion suffers, and there is a great deal of nervousness and mental depression. For slighter cases a suspensory bandage must be still recommended." (p. 12.)

II. *On Paraplegia depending on Disease of the Ligaments of the Spine.* By Mr. KEY.—This may be considered as supplementary to Mr. Earle's and Mr. Stanley's communications on Paralysis in the Medico-Chirurgical Transactions.

How difficult it is often to trace this affection to its true seat during life is acknowledged by all practical men. The object of the present paper is to make known a hitherto neglected source of this disorder,—namely, a local thickening of the posterior vertebral ligament, carried to such a degree as to form a projection into the vertebral canal, and, by making pressure on the spinal marrow, to interfere with the exercise of its functions. The thickened portion of ligament is occasionally much increased in hardness, or even ossified.

Though there are but two cases given, with the appearances on dissection confirmatory of the reality of this cause of paraplegia, they are, we think, quite sufficient to impress on the pathological anatomist the necessity of examining the caliber of the vertebral canal carefully throughout its whole extent in cases characterized, during life, by loss of power in the lower parts of the body; especially in those instances where no distortion nor tenderness on pressure was discoverable.

The first case presented numerous complications: we shall confine our extracts to the morbid appearances observed within the spine.

"The bodies of the lumbar vertebræ were covered with irregular prominences of bone, and the intervertebral substances projected more than usual within the canal of the spine. The ligaments covering the intervertebral substance between the second and third lumbar vertebræ were found hardened and prominent, and projected so far into the canal as to diminish it by one third of its diameter, thus causing considerable pressure on the spinal marrow." (p. 19.)

The subject of the second case, George Weeks, aged forty-four, tall, and daily exposed by his occupation to more exercise on foot than he was well able to bear, was seized, about twelve months before admission, with a feeling of weakness in the left knee, which soon extended to the foot, accompanied with numbness and a sensation of cold. The right leg became similarly affected in a week or two, and he suffered from catching pains in the hip-joint from motion; but was able to continue his walking employment till within a few days of coming into the hospital. He had for two months back noticed a want of power in the sphincter ani, and had been conscious for about the same period of giddiness, especially upon any exertion. There was now almost entire loss of power in the lower extremities, more particularly the left, with numbness, tingling, and occasional pain, extending from the loins downwards, and inability to empty the bladder except in drops. There was no pain in the back either on pressure or motion, nor weakness in the arms. Appetite good ; sexual passion extinct.

The employment of purgatives, together with calomel and cupping on the loins, was productive of no marked benefit. Pain in the hypogastric region began to be complained of, and was soon followed by an abundant and very fetid muco-purulent discharge from the bladder; the urine, which was turbid and fetid, dribbling away incessantly. Extensive sloughing of the nates supervened ; and under this complication of evils he speedily sunk.

The appearances on dissection, we are sorry to observe, are given in a

very careless and imperfect manner; but for this Mr. Key is not nomi-
nally responsible. Thus, with regard to the brain, which was rather
small, it is stated that the exterior only was examined! "it seemed na-
tural, but for a little opacity and fluid effusion." " The liver, spleen,
and kidneys did not appear healthy." But we are not favoured with the
peculiar deviation from the natural condition exhibited by the two former.

"A few points of purulent deposit were found in the kidneys. The bladder and
ureters were extensively coated with sloughy, fibrinous, adhesive layers, and their
surfaces were bathed in a sanguineous and puriform secretion. The intervertebral
substance above the twelfth dorsal vertebra, with the ligaments covering it, presented
a slight ridge projecting into the medullary canal, as if an ossification from the edge
of one bone tended to unite with a similar growth from the opposite edge. This
transverse ridge manifestly narrowed the canal, as was very evident on passing the
finger from the wider to the contracted part. On making a vertical section of the
spinal column at this part, it appeared that the adjoining edges of bone, as well as
the intervertebral substance, projected into the canal; the prominence of the last
being the most considerable. The preparation shows, in addition, in the spinal canal
a degree of angular flexure forwards at the point of disease. The medulla was very
carefully examined, but seemed quite sound." (p. 22.)

The coexistence of urinary disease with paraplegia, enlarged upon in
Mr. Stanley's paper, was exemplified in both of Mr. Key's cases, who
ascribes the inflammation of the kidneys and neighbouring parts to the
depressed condition of the nerves; finding in it a close analogy to the
destructive ulceration of the large intestines, so often met with in the
latter stages of many protracted disorders. The bony union which was
taking place between the adjacent vertebræ, by the ossification of the
connecting ligament, reminds us of the unnatural consolidation of the
bones of the back so often met with in overworked horses.

Mr. Key suggests that the failure of the lower limbs, so frequently
observed in elderly persons of a tall slight make, who have long been in
the habit of exercising beyond their strength, (a failure which not unfre-
quently passes into complete paraplegia,) may occasionally have its
source in the morbid alteration just exemplified; especially when no
evidence of cerebral disease, and no pain or irregularity in any portion
of the spinal column are discoverable. When the muscles of the back
prove unequal to its support, during periods of protracted exertion, an
unnatural stress will necessarily be thrown on the spinal ligaments,
which may readily be conceived to induce morbid alterations in their
structure. A rigid adherence to the horizontal posture is the only re-
medy for such cases.

It is not to be expected, as Mr. K. justly remarks, that the alteration
of the ligaments will be uniformly the same, or always attended with
precisely the same train of symptoms. Thus, in the young and strumous,
the ligaments may be merely thickened and softened, and so cause only
a temporary pressure, or they may be so far weakened and yield so as to
allow of displacement of the vertebræ, and lead to absorption of the in-
tervertebral substance; or, what is more likely to be the case in persons
of advanced age, ossification may take place; and, in either of these
latter states, the compression of the cord will most probably be perma-
nent.

It is but rarely, however, that we can expect to have an opportunity
of verifying the connexion of paraplegia with disease of the posterior

ligament; for either the patient, under judicious treatment, recovers entirely, or, if he fall a victim to the disease, it is generally not until a very advanced period of it, when suppurative ulceration has made such progress as to have obliterated all vestiges of the original commencement of the disease, in the general destruction of bone and ligament.

III. *Researches into the Chemical Nature of Mucous and Purulent Secretions.* By GOLDING BIRD, F.L.S.—This is in many respects an important paper; but we shall have an early opportunity of discussing the subject of it more at length, when we will not fail to notice the author's experiments and views.

IV. *On the Action of Water on Lead, in relation to Medical Police.* By Mr. A. S. TAYLOR.—It is chiefly to the accurate researches of Dr. Christison that we are indebted for our present greatly augmented knowledge of this subject, and the correction of many serious errors which prevailed in regard to it.

" This gentleman found that pure water, exposed to air, acted with the greatest rapidity on lead; that the chemical change consisted, on these occasions, in the simple formation of a carbonate, which was partly deposited on the lead, but chiefly at the bottom of the vessel; that a minute portion of this carbonate was also, under these circumstances, dissolved; that natural water containing saline matter has little or no action on lead; and that, if any carbonate were formed and dissolved, it was only in the most minute portion, and after the lapse of a considerable interval. He discovered, further, that if certain neutral salts were dissolved in distilled water, they retarded or prevented its corrosive action on lead, allowing the carbonate to deposit itself slowly, and adhere with such firmness to the metal as not to be afterwards removable by moderate agitation; adding, subsequently, to this crust other insoluble salts of lead, the acids of which are derived from the neutral salts in solution; and thus at length forming a permanent and impermeable screen, through which the action of the water cannot any longer be carried on." (pp. 62-3.)

The object of Mr. Taylor's communication is chiefly to confirm the accuracy of Dr. Christison's conclusions by an extensive series of experiments performed at intervals during the last seven years; to determine the best means of preventing water acquiring the poisonous impregnation in question; and to ascertain more accurately, in respect to those neutral salts which are known to exercise a preservative influence, the relative share which the acid and base respectively have therein.

Pure water has no action on lead, if deprived entirely of atmospheric air and of carbonic acid; and, when they are present, the water seems merely to promote the formation of the carbonate by the exertion of a catalytic force, or by holding the gases in solution or in a state favorable to chemical combination. The brighter the metal the more rapidly does the change go forward: hence, *cæteris paribus*, the greater the risk with *new* leaden cisterns, pipes, or roofs, as compared with old ones. It is accelerated likewise when a portion of the lead is out of the water; the carbonate collecting most rapidly on that part which is just above the level of the fluid, and is consequently always humid with the pure water of vaporization. Hence the obvious propriety of keeping such cisterns always at the same level, or at least having them refilled at very short intervals; as the exposure of a large, moist surface to the air for several hours together leads to an extensive formation of the carbonate, to be

washed off and diffused through the fluid at its next rising. An augmented temperature likewise facilitates this process, which, accordingly, Mr. Taylor has observed to go on more rapidly in summer than in winter.

The carbonate, which some toxicologists assert, though probably erroneously, to be the only poisonous salt of lead, is soluble, though in a very low degree, in water, which seems capable of taking up about $\frac{1}{3000}$th part of its weight. A much larger additional quantity of it may, however, exist in water in a state of mechanical diffusion, which, together with the sedimentary portion, greatly increases the danger, especially in respect to those culinary operations in which acid substances are employed. Hence the necessity of a precautionary infiltration in all dubious cases is obvious.

River water and spring water, which generally abound in saline substances, have, as compared with rain or distilled water, little or no action on lead; though the very opposite was till lately the prevalent opinion, having been stated by Dr. Lambe and sanctioned by Dr. Thomson. Mr. Taylor has kept the Thames water, with a piece of lead immersed in it, for eight months, without almost any change being produced. Where, however, carbonic acid is present in considerable quantity, the case is much altered. " Whether an unusually large proportion of saline ingredients will give rise to a chemical action between hard water and lead is a point which has not been examined; but it appears to me," says Mr. Taylor, " that this is not improbable, at least, in respect to certain salts."

At the head of substances exercising an influence preventive of the formation of the carbonate stands the sulphate of lime, so common an ingredient of natural waters; the presence of $\frac{1}{4000}$th part of this substance being a sufficient preservative. The other sulphates, and especially that of magnesia, likewise possess this property in a high degree. The muriates are inferior; and still lower in the scale stand the carbonates and nitrates.

Mr. Taylor's experiments confirm those of Dr. Christison as to the beneficial influence depending much more on the acid, and more particularly on the degree of the insolubility of the compound it forms with lead, than on the base. The presence of sulphuric acid in very small quantity in water retards for a time, but does not eventually prohibit, the formation of the carbonate. Phosphate of soda possesses the protective influence in a high degree. Chloride of sodium, or common salt, is but an imperfect preservative: $\frac{1}{4000}$th of it seems to delay the action for a few days; but, within not many weeks, a considerable formation of the chloride and carbonate of lead was found to have taken place. Hence it is obviously unsuitable for those cases where water has to be preserved long in leaden vessels; though, from the facility with which it is obtainable, we may be justified in employing it for shorter periods, as recommended by Dr. Christison, whose experiments have shown that it should not be used in a less proportion than the $\frac{1}{2000}$th of the weight of the water.

As the result of all his investigations, Mr. Taylor comes finally to the conclusion, previously arrived at by Guyton Morveau and Dr. Christison, that the best preservative we can employ, in respect to soft water, is the addition of a small quantity of a solution of sulphate of lime. " But," he continues, " if the water contain much carbonic acid, and more especially

if the cistern be close, or if the water containing the gas have to traverse leaden pipes, preservative salts will be of little avail." The introduction of a coil of iron wire he likewise found very effectual in preventing the formation of the poisonous carbonate. The oxide of iron, which is abundantly produced, though it may be in some instances a source of inconvenience, is at least innocuous: hence he suggests the introduction of rings or tubes of sheet-iron within the pipes of lead, when the latter cannot be dispensed with.

Like all Mr. Taylor's writings, this paper is distinguished by ingenuity, clearness of views and of style, and sound judgment.

V. *On the Process of Reparation in simple Fractures of Bones.* By Mr. BRANSBY COOPER.—This is the continuation of the paper noticed in our Number for October last. The result of the elaborate and judicious series of experiments instituted by Mr. Cooper, in reference to the phenomena of reparation in fractures of bones, almost leads us to the conclusion that, previously to his investigations, we had already realized all the information on that subject which nature deigns to vouchsafe to us; all, in fact, that our senses can well appreciate. Mr. Cooper's investigations are extremely important, as confirming and setting to rights our theoretical notions in respect of this important function of the economy; but we cannot perceive that he has added a single new fact on which the mind can linger. His own summary of the result of his investigations speaks of nothing novel.

"To sum up in a few words the result of the foregoing investigation, as far as it has been carried, I should say that the effects of a simple fracture of bone are, first, the effusion of a greater or less quantity of blood; next, the absorption of its serum and red particles; inflammation of the bone and all the surrounding tissues next takes place: this leads to a deposition of lymph, which soon becomes hardened into cartilages, which, if not different in character, seem, at least, to perform two distinct offices: that secreted by the cellular membrane of the surrounding soft structures produces, by its hardness and contraction, an approximation, or even contact, of its fractured portions; and this, proving a fresh source of excitement to the cartilage secreted by the vessels of the bone, leads to its ossification: whilst that thrown out by the soft parts is, in the end, either absorbed or converted into a structure the same with that which effused it; showing that the vessels of each part are capable of appropriating their blood to the reproduction of the particular structure from which it was derived." (p. 130.)

Mr. Cooper's essay, together with the beautiful and faithful plates which accompany it, should be studied by both practitioner and student.

VI. *On Hemorrhage from the unimpregnated Uterus, associated with Tumours of varying Degrees of Induration and Malignancy.* By S. ASHWELL, M.D.—Dr. Ashwell adduces five cases to prove that hard or fibrous tumours of the uterus, by many not regarded as malignant, and by himself viewed as occupying the lowest place in the scale of malignancy, may occasionally give rise to frequent, excessive, and fatal hemorrhage. Such tumours, he states, are observed to grow internally, not imbedding themselves in the walls of the uterus towards its peritoneal covering, but, by their increase of size, stretching and irritating the mucous membrane, and thus giving rise to hemorrhage, with at times a morbid growth of the tissue. That a tumour of this kind may, by

commencing just behind the mucous membrane, and increasing inwards, descend even to pass through the os uteri, he admits, but considers it still to be a hard or fibrous tumour, and denies its identity with polypus. He enumerates many points of dissimilarity between this form of growth and polypus. While insensibility is an almost invariable condition of true polypus, this tumour is never bereft of it. The polypus is spongy and copiously permeable by blood; the hard tumour will not admit of injection: and this fact Dr. Ashwell considers as favouring the opinion that the hemorrhage comes, in the latter case, from the membrane covering the tumour, and not from the growth itself. The chief advantage as influencing the treatment, in Dr. A.'s opinion, derivable from the correct diagnosis in this case is, that it will lead to a more careful and protracted management; palliation being all that can be expected. Removal by ligature he considers objectionable, owing principally to the sensibility of the tumour and the difficulty of applying the ligature without including other than the diseased structure. Perfect rest, astringents, anodynes, &c. are the means to be employed. He cautions practitioners against the use of the secale cornutum, which, he says, and we can well conceive it should, has appeared to him to increase the hemorrhage. The cases given fully bear out Dr. Ashwell's views.

VII. *Summary of Cases in the Obstetric Ward, &c.* By Dr. Ashwell. —This summary is interesting, but does not present to our notice anything new. A case of Retroversio Uteri is given, which is so far of importance as showing that the female bladder may be considerably distended, and yet the patient seem to pass a fair portion of urine. We subjoin a brief abstract of the case:—The patient was aged forty-one, had given birth to ten children, and suffered three miscarriages. Three weeks before admission she had been annoyed by constant stillicidium urinæ, followed soon after by increased swelling of the abdomen, with pain in the back and dragging sensation at the umbilicus: still she daily passed a considerable quantity of water, occasionally of a high colour. During the first night after admission into the hospital, she, by voluntary efforts, passed two pints of urine. Shortly afterwards, eleven pints of ammoniacal urine were drawn off by the catheter, and the uterus was then artificially restored to its normal situation. In five days she aborted of a three-months' fœtus, (the bladder having been meantime constantly emptied by the catheter,) and sank in ninety-six hours. Had the true nature of this case been detected at an earlier period, the probability is that the result would have been more favorable. This case carries with it a valuable warning.

As of less importance, we shall pass over two papers by Mr. King, *On White Patches in the Heart*, and *On Compression of the left Bronchus;* as also *A Case of Dislocation of the Femur*, by Dr. Cummins, of Dundee, and *An Account of a large Calculus passed by a young Woman*, by Mr. Harris, of Redruth. Two other papers, by Dr. Bright and Dr. Guy, are continued in the following Number, and will be noticed with its other more important contents, which we shall now take in order.

VIII. *A Contribution to the Pathology of Congenital Deafness.* By

EDWARD COCK.—In this paper Mr. Cock gives seven cases, in which he examined anatomically the ears of persons deaf from birth; and, for the purpose of rendering the present article more complete, and laying before the reader in one view the whole series of malformations which he has discovered from time to time, he has extracted from the Medico-Chirurgical Transactions the results of his earlier labours. Though in these cases Mr. Cock has not, we think, observed anything of importance not noticed by both earlier and contemporary investigators,— such as Mondini, Ilg, Mürer, Mücke, Bachdalch, and Hyrtl, not to mention Heusinger, Hasselbach, Schallgruber (a most appropriate name for the investigator of the organ of hearing), &c.—still that does not make Mr. C.'s "Contribution" the less acceptable: on the contrary, it makes it the more valuable as confirmatory evidence.

When we dissect the eyeball to discover morbid changes, we think it of importance to examine the state, not only of the sclerotica, cornea, aqueous chambers, iris, and optic nerve, but also the choroid, retina, vitreous humour, and lens. Unfortunately, however, it does not appear to have been considered of equal importance to investigate with care the soft parts contained within the bony shell of the labyrinth: for, notwithstanding we have a good deal recorded on the morbid states of the osseous labyrinth, we may say that we have no observations at all bearing on those of the membranous labyrinth: a strange oversight, certainly, to direct attention to the shell, and neglect the kernel! There are considerable difficulties in the way, no doubt, but they are not insuperable. In museums we see numberless pieces of temporal bones, dry and white like ivory, most ingeniously carved, which, we are informed, are "preparations of the internal ear;" but we almost never see or hear of a real preparation of the internal ear; that is, not only the labyrinthic cavity laid open, but also the membranous labyrinth, with the distribution of the auditory nerve exhibited *in situ*. Some writers on the ear have even confessed, tacitly or openly, they never could see the membranous labyrinth; and, in a "prize essay" on the Ear, recently published, we are told that "the author has several times sought for the calcareous particles of the membranous labyrinth in the human ear, but hitherto unsuccessfully, except perhaps in one instance; [why perhaps?] and, upon enquiry, he cannot ascertain that any of his anatomical friends have seen them, though he is aware that they are now frequently alluded to." The author then goes on to conclude that "*most probably they do not universally exist in the mammalia.*" A most convenient conclusion! All this shows that, as even the healthy structure of the membranous labyrinth is not yet so commonly known as it certainly should be by many of those who write *ex professo* on the subject, we cannot in general expect to have much of any consequence on the morbid states of it.

We shall not follow Mr. C. through his cases, but only glance at the results, as we hope, in an early Number, to consider the whole subject of *Otology* more at large.

Mr. Cock classes the different abnormal appearances he found in his cases under the following heads: 1. An adventitious growth filling up, and thus obliterating, more or less completely, the cavity of the tympanum, enveloping the chain of bones, and encroaching upon the openings

of the Eustachian tube, mastoid cells, and fenestra rotunda. 2. Deficiency of the fenestra rotunda; thus rendering one extremity of the labyrinthine canal solid and immovable, instead of yielding. 3. Partial or complete deficiency of the spiral canals of the cochlea. 4. Preternatural enlargement of the aqueductus vestibuli. 5. Deficiency of the semicircular canals. 6. Unnatural solidity or hardness of the temporal bone. In most of the cases detailed several of these appearances existed in combination.

Mr. C. next proceeds to enquire what share these different morbid changes were likely to have as causes of deafness, and comes to the conclusion (we think very justly) that, in cases of the first two sorts, the appearances were quite enough to account for the deafness; though he cautiously abstains from pronouncing whether the appreciable changes in cases of the first sort might or might not have been a mere subsequent formation, depending upon and accruing from a prior defect in the sense of hearing, from some unknown cause.

" Much remains to be discovered before the causes of congenital deafness can be satisfactorily explained; for I feel assured that in some, if not in many instances, the deviations I have noticed are quite insufficient to account for a total privation of the sense of hearing; and the fact of several cases having occurred in which no malformation could be detected proves that there must be some other defect, either organic or functional, the demonstration or explanation of which has, as yet, eluded our research." (p. 306.)

The great practical question to settle is, " Are any cases of congenital deafness remediable ?"—that is, " Can serviceable hearing be restored ?" The question is not, " Can the congenitally deaf be taught to speak ?" This has been already answered in the affirmative. In our purposed article, we shall examine into Deleau's reputed success in regard to the first question.

Mr. Cock concludes his very sensible and useful paper with the following reflections, which we most heartily reecho:

" There can be no doubt that, even in cases of congenital deaf-dumbness, the derangement of the organ, whether functional or organic, may exist in different degrees of intensity; that in some instances the mischief consists merely of an imperfection or dulness of hearing, which, from neglect, has entailed the additional misfortune of dumbness on the sufferer; whilst in others it amounts to a total and irremediable privation of the sense. The power of discrimination can only be acquired by the intelligent and scientific aurist, and must be the result of much experience and patient investigation; but the knowledge thus acquired would frequently prove the means of rescuing the hopelessly deaf and dumb from the constitutional injury and bodily suffering consequent upon tedious and painful courses of treatment, indiscriminately adopted by the ignorant and pretending empiric. It would, in many cases, suggest to the upright and humane practitioner the more eligible plan of attending to the cultivation of the other senses through which the mind of man holds intercourse with the external world; and devoting to the mental improvement and education of the sufferer that time and attention, now too often wasted in the employment of means which only serve to impair the mental and bodily powers, while they impose on the credulity of the patient or his friends." (p. 308.)

IX. *Observations on Intussusception as it occurs in Infants.* By Mr. Gorham.—The principal object of this paper is to point out a particular symptom as confirming the diagnosis of intussusception in infants. This symptom is the discharge of a greater or lesser portion of pure blood by stool, unmixed with any portion of fecal matter, and generally

without even the slime or mucus of the intestines. Mr. Gorham believes that, if discharge of pure blood *per anum* takes place in conjunction with constipation and vomiting, it is a symptom pointing out the existence of inflammatory intussusception. He adduces nine cases in support of his opinion; one from his own practice, and some others collected from different sources; in all which cases this symptom was present, occurring early in the disease, and generally coming on immediately after vomiting. Mr. G. considers intussusception under two heads: 1st, Intussusception unattended with inflammation; and, 2, Inflammatory intussusception. He considers the first of these as an extremely common occurrence in infants, not to be recognized during life, but frequently detected on examination of the bodies of infants who have died from other diseases: and here the experience of M. Billard, (*Traité des Maladies des Enfans Nouveaux-nés et a la Mammelle,*) supports that of Mr. Gorham. The second kind of intussusception appears to us rather as an occasional consequence of the first than as an affection *sui generis.* The first kind of invagination reveals itself by no symptoms; but, if it continue beyond a certain period, and offer any obstacle to the passage of food or fecal matters, pain and inflammation are established, and the disease passes to the author's second form.

Mr. Gorham does not attempt in his paper to add anything to the present state of our knowledge on the treatment of this affection. He seems to think highly of the treatment by inflation, and recommends, when all other remedies have failed, " the introduction of the nozzle of a common pair of bellows into the rectum, and gradually inflating the intestine." Three cases are quoted in which this plan of treatment was successfully employed. Injections of large quantities of warm thin gruel are also advisable, used by means of a conical clyster-pipe, to prevent the return of the enema. Two cases treated in this manner, by Mr. Finch, of Greenwich, terminated favorably. The matter of this essay is valuable: there are, however, some gross inaccuracies of style in its composition, which we hope to see amended when Mr. Gorham again appears before the public.

X. *Cases and observations in Medical Jurisprudence.* By Mr. ALFRED S. TAYLOR.—The first is " a case of poisoning by oxalic acid." In this instance the patient, a man aged fifty-six, swallowed seven drachms of oxalic acid, mixed in some warm water, to which he added a glass of rum; the poison was taken an hour after breakfast, which the patient ate in the usual manner. Violent pain and vomiting came on in five or six minutes; to this succeeded cold clammy perspirations, convulsions, and death at the end of a quarter of an hour or twenty minutes, from the period of taking the poison: no treatment was employed. The body was examined seventy-two hours after death. The appearances found in subjects poisoned by oxalic acid present considerable variety. It might, a priori, be supposed that the presence of so violent an irritant would produce, and leave behind in the stomach evidences of the most intense inflammation; such however, in all instances, does not appear to be the case. In the present instance, as well as in one recorded by Dr. Christison, and in some experiments upon animals made by Mr. Taylor, no effects of inflammation were to be perceived; in the case

quoted by Dr. Christison from the London Medical Repository, "no morbid appearance whatever was to be seen in any part of the alimentary canal." In Mr. Taylor's case, "the mucous membrane appeared pale and softened, entirely free from rugæ. There were no traces of inflammation or abrasion in any part; and the surface of the membrane presented, throughout, the same characters. The paleness and softening of the membrane were such as we might suppose it to assume after having been boiled some time in water." The mucous membrane of the thoracic portion of the œsophagus was likewise pale, in some places abraded, containing, as did the stomach, a dark brown gelatinous liquid. This liquid is constantly present in the stomach in cases of poisoning by oxalic acid, and results from the mixture of a considerable portion of blood with the poisonous solution taken. In cases of ulceration of the stomach also, where oozing of blood is slowly going on, this dark brown gelatinous liquid is commonly present, and results, according to the researches of M. Cruveilhier, from the admixture of blood with the free acids of the gastric juice.

The small intestines were slightly inflamed, and contained some dark coloured viscid mucus. The parenchymatous organs,—the lungs, liver, spleen, and kidneys,—were highly congested with dark coloured blood. "The blood throughout the cavities, except in the minute vessels of the œsophagus and stomach, was universally fluid and dark coloured." No mention of the condition of the brain and spinal cord is made: probably nothing morbid would have been found; although in such a case as the present, where the mere local effects of the poison are so slight and unsatisfactory, the fatal issue appears to be made through the medium of the blood upon the centres of the nervous system.

The second communication of Mr. Taylor is a "case of survivorship after extensive rupture of the diaphragm."

Extensive ruptures of the diaphragm are generally fatal, and if not immediately so, commonly leave behind them a series of symptoms by which their existence may be strongly suspected, if not pretty clearly known. A case rarely occurs like the one detailed by Mr. Taylor, in which even the existence of such an occurrence was unsuspected during life; yet, on examination after death, the diaphragm is found extensively torn, and a considerable part of the viscera of the abdomen actually in the cavity of the chest.

The subject of the present case, a sailor aged forty, fell on the deck of his vessel nine months previous to his death, by which fall his ankle was severely injured, and several ribs fractured. The state of the ankle became subsequently so bad, that amputation of the leg was performed by Mr. Morgan. From this he sunk, and died about a month after the operation. The following appearances presented themselves on examination of the body.

"The left lung, which was much contracted, lay superiorly and behind. Its upper portion was pale, sloughy, and crepitant: its middle portion, unusually divided from the rest, pale, soft, and completely hepatized. Inferiorly, this organ was of a dark red colour, empty and compressed. The cause of this abnormal condition now became obvious. Two thirds of this side, or nearly one half of the whole cavity of the chest, was filled up by the distended stomach and a long curve of the arch of the colon. These parts, which had protruded through an aperture in the diaphragm, were covered with a great deal of thin omentum. It was found, on

further examination, that the opening, which was two and a half inches in extent, was situated in the muscular part of the diaphragm, anteriorly and a little to the left of the œsophageal opening. The margin of the aperture, to which the omentum was, in one or two places strongly adherent, was opaque, yellowish, firm, and even. The ascending colon ran on the right side, and a little posteriorly; whilst the descending colon ran out anteriorly. The bowel, in a contracted state, to the extent of about twelve inches, was folded vertically on the right end of the stomach, which was much distended with air; and covered externally in great part by omentum." (p. 367.)

Mr. Taylor next records two cases of open foramen ovale; one in a woman aged fifty, and another in a boy aged eleven. In the first case the patient died from disease of the womb, no symptom of any kind existing from which this condition could be suspected during life. In the second instance some slight blueness of the lips was present a few days before death, and the boy died very suddenly after placing his hand upon his heart and crying out.

XI. *Some Observations on the causes of Strangulation in Hernia, and on the causes of Death: and also on the Rules of Treatment which such considerations enforce.* By J. W. KING.—Mr. King tells us that " most herniæ exist for years before they become subject to dangerous strangulation;" in support of this proposition he gives a table of one hundred cases of strangulated bowel, which bear him out in its correctness. On the causes of strangulation in old herniæ, Mr. King appears to entertain some most original ideas. It is not, we are told, owing to the neck of the sac becoming narrower with increasing years. "Certainly not. The hernia increases with time," and the sac with its neck becomes enlarged, in proportion to the size of the protrusion. As long as the general health continues good, an incarcerated bowel or epiploon "resists alike constriction and turgescence." " But with a certain decline of vigour and health, and most commonly with manifest deterioration of the great depurative organs of the body, the case is altered, its own turgescence seems to strangle it, and all the products of inflammation are of a deleterious or fatal kind: its course is happily slow; but a genuine organizable fibrin, a natural ulcerative absorption, or even fair pus, are sought in vain: a tendency to decomposition is the only uniform character; delayed, however, in proportion to the wideness of the sac's mouth."

In our anxiety to lay before our readers all that is valuable in the books and papers submitted to us, we have read and reread the passage just quoted, which professes to explain Mr. King's views on the causes of incarceration in old herniæ; but we are sorry to say without success. To us his language is truly a Gordian knot; we cannot untie it.

The remainder of his communications is occupied by a consideration of the fatal terminations of incarcerated herniæ, both after the employment of the taxis and from the reduction by the operation. It is disfigured by the same ambiguity of expression, the same loose and undefined ideas, which characterize the former parts. The author speaks of " *inorganizable effusions,*" " *exalted irritation,*" " *latent excitement,*" and " *organic deterioration;*" and the reader, amid the chaff of many such unmeaning and high-sounding words, attempts in vain to glean even a few grains that may avail him in the hour of practical need.

XII. *Chemical examination of the Liquor Amnii.* By G. O. Rees, m.d.—This fluid has been analysed by Buniva, Vauquelin, Frommhertz, Dr. Vogt of Bern, and also by Dr. Bostock, the results of whose experiments are given in an article "on albuminous fluids," in the Medico-chirurgical Transactions. From some discrepancy in the analysis of these chemists, Dr. Rees was induced to make some fresh experiments, taking especial care that the fluid was obtained pure; noticing, at the same time, the period of pregnancy at which it was examined, and the condition of health of the subject from whom it was taken. The first analysis was made upon the liquor amnii of a healthy woman, seven months and a half advanced in her pregnancy, upon whom premature labour was induced on account of a contracted and deformed pelvis. The following are the results.

Strongly alkaline . . Sp. gravity, 1008·6
Contained in 1000 parts:

Water	983·4
Albumen (traces of fatty matter)	5·9
Albuminate of soda, chloride of sodium	6·1
Animal extractive, soluble in water and alcohol, urea, chloride of sodium	4·6
Traces of alkaline sulphate	

The "proportional constitution" of the liquor amnii varies in different individuals at the same period of utero-gestation, as a reference to the other analysis of this fluid, given in Dr. Rees's paper, will clearly show. Whilst, however, the relative proportionate composition varies in different individuals at the same period of gestation, the specific gravity remains the same.

XIII. Dr. Rees next presents us with an *Analysis of Diabetic Blood.* —It is well known that in the several forms of diabetes mellitus chemists have hitherto been unsuccessful in detecting the existence of sugar in the blood. Drs. Wollaston, Henry, and others, could not, in their researches, discover any trace of it. Subsequently, however, Mr. M'Gregor, of Glasgow, has shown that sugar is present not only in the blood and urine, but also in several secretions and excretions. Ambrosiani has since been able to separate crystals of sugar from the serum of diabetic blood. In the present communication Dr. Rees favours us with a description of the manner in which he has been enabled to detect this substance in the blood of patients labouring under this disease. The following analysis is the result of his investigations:

Water	908·50
Albumen (yielding traces of phosphate of lime and iron, on incineration,	80·35
Fatty matter	0·95
Diabetic sugar	1·80
Animal extractive, soluble in alcohol, urea	2·20
Albuminate of soda	0·80
Alkaline chloride, with traces of phosphate; alkaline carbonate, and traces of sulphate, the results of incineration	4·40
Loss	1·00

XIV. *Physiological Observations on the Muscles of the Eye.* By Mr. B. Cooper.—This paper is carelessly written, but contains some novelty. Mr. Cooper divided the superior and oblique muscles in the

eyes of several living rabbits, and makes the following deductions from these experiments; "that the oblique muscles, when acting together, suspend the eyeball in a central position in the *orbiter* cavity, moderate the retracting influence of the four straight muscles, and, when acting in succession, without being restricted by the influence of the recti, they roll the eye on its own axis, drawing the globe forward, and at the same time tending, in a great degree, to extend the sphere of vision."

XV. *On the Effect produced on the Pulse by Change of Posture.* By W. A. GUY, M.B. Cantab.—That the pulse is usually higher in the standing posture than when sitting, and in this again than when lying, was made known to the profession by Dr. Bryan Robinson about a century ago. This subject, or *the differential pulse*, as it is called, was revived about fifty years since by Dr. Macdonnell, of Belfast, and touched upon soon after by Dr. Falconer, of Bath.

Dr. Knox, in a paper published in the Edinburgh Medical and Surgical Journal, in 1815, and lately republished in an enlarged form, which we noticed in our Seventh Number, showed that the difference in the pulse alluded to is at its maximum in the morning, and decreases considerably as the day advances. Dr. Graves ascertained that it becomes more marked as the pulse augments in frequency. A number of observations were made by Dr. Hohl, of Halle, on the pulses of pregnant women, and are related in his work on the exploration of pregnancy. They afford the following averages: Pulse, when standing, 94—sitting, 83—lying, 77; proving that the general rule to which we have alluded is not interfered with by the existence of pregnancy.

Dr. Guy's first paper is founded on one hundred experiments, all made on males; they were commenced in the year 1832. " They were all made on healthy males who had not eaten food for at least two hours previously, and had remained at rest for some time, and ordinarily between noon and two o'clock, P.M., before the person had taken any violent exercise or exposed himself to any other cause of excitement." The age of the persons submitted to experiment ranged from twenty to fifty; the great majority, however, were under thirty, the mean age being a little above twenty-seven. The mean results arrived at by Dr. Guy, omitting fractions were, standing, pulse 79—sitting, 70—lying, 67. Hence the mean difference between standing and sitting was 9; that between sitting and lying 3; and between standing and lying 12.

Some of the extreme cases were, however, very distant from these mean results, as is obvious from the tables given. Thus, the maximum difference between standing and lying amounted to 44 beats, or little less than one half of the total number of pulsations in the erect posture; whilst, in seven cases, this difference was so low as 4, or only $\frac{1}{14}$th of the whole number; in three instances it was no more than 2 beats; in three there was no difference at all; and in five the pulse was actually *higher* when lying than when standing; ditto when sitting than when standing, in three; ditto when lying than when sitting, in eleven: in nineteen instances there was no difference between sitting and lying; and in five none between standing and sitting.

These exceptional cases, however, bear but a small proportion to the whole number on which the law rests. If they be struck out of the

tables, the mean number of pulsations in the standing, sitting, and lying posture, appear to be 81, 71, and 66, respectively; that is, the difference between standing and sitting $= 10$ beats or $\frac{1}{8}$th of the whole; the difference between sitting and lying 5 beats or $\frac{1}{14}$th of the whole; that between standing and lying 15 beats or $\frac{1}{5}$th of the whole.[*] Hence, if we know what the pulse is in the erect posture, and would calculate what it is probably in the sitting posture, we have only to subtract $\frac{1}{8}$th, or from the lying posture $\frac{1}{5}$th. But it must be remembered that these average proportions hold good only in respect to a pulse in a quiet state, and of moderate quickness (60 to 90); the differences increasing in a greatly augmented ratio when the pulse is accelerated: thus, for example, when the pulse is between 90 and 100, standing, the recumbent pulse will be about $\frac{1}{4}$th less; if between 110 and 130, the recumbent pulse will be about $\frac{1}{3}$d less.

Both Dr. Graves and Dr. Knox have regarded the degrees of effect produced on the pulse by posture as a measure of debility. Whether it is a strictly appropriate one must be doubted, when we recollect that the casually accelerated pulse of a stout and healthy individual manifests equal amounts of variation, under the influence of posture, with those observed in the case of an equivalent pulse in disease. The pulse, as it has been correctly stated by Robinson and Graves, is strongest in the horizontal position, so that its maximum of strength and minimum frequency are attained together. It is deduced by Dr. Guy from his own tables, that the exceptional cases, that is, those in which change of posture does not produce its ordinary effect, diminish in frequency as the pulse becomes more rapid. Thus, for example, out of fifty cases, where the pulse was between 51 and 70, there were eighteen exceptions; whilst out of other fifty, where the pulse was between 110 and 130, only one exception occurred. So likewise irregularities of pulse often disappear under the influence of feverish excitement.

By means of a couch revolving on an axis, Dr. Guy satisfied himself of the correctness of Dr. Macdonnell's and Dr. Graves's observations, as to the rise in the pulse being altogether independent of the effort by which the posture is changed. He has moreover proved experimentally what had been only surmised by others before him, namely, that the true cause of the increased frequency of the pulse in the sitting and standing posture, as compared with the recumbent, is the muscular exertion employed in their maintenance. Thus he found that the usual effect on the pulse in the sitting posture was almost entirely superseded when the back was supported, as was likewise the case in the erect posture when the individual leaned upon some high object. Whilst, on the other hand, the pulse in the horizontal posture rose no less than 14 beats on an average, on the body being supported merely under the head and shoulders and under the heels; whilst, in the sitting posture likewise, the circulation was considerably accelerated when the legs

* The difference between the number of pulsations when standing and when lying amounts, according to Robinson, to 14; Macdonnell, 12 to 16; Falconer, $6\frac{3}{4}$; Knox, 10; Graves, 6 to 15; Nick, 15 to 20; Hohl, (in pregnancy) 17.

The large number of experiments on which Dr. Guy's averages, given above, rest entitle them to much consideration.

were raised by a muscular effort to right angles with the unsupported trunk.

Those who, like Blackley, have ascribed the effect on the pulse to the altered position of the heart and its valves in the erect, as compared with the recumbent posture, or, like Arnott, to the change in respect to the gravitation of the blood, seem to have forgotten that, whilst the difference between the pulse of the erect and sitting posture is nearly double of that between the sitting and recumbent posture; yet the above conditions in respect to the heart's gravity remain, whether sitting or standing, nearly the same.

In Dr. Guy's second paper, the subjects of the experiments are females; and he here limits himself to the examination of fifty subjects, instead, as in the former instance, of one hundred; since, " for obvious reasons, opportunities of making correct observations on the pulses of healthy females occur but rarely." The ages of the persons examined in these experiments ranged from eighteen to eighty, giving a mean age of 27·18, and affording the following results: Standing posture, 89·26; sitting ditto, 81·98; lying, 80·24. These numbers give, as a general rule, an average difference of frequency in pulsation between the standing and sitting postures of 7·28; between the sitting and lying, of 1·74; and between the standing and lying, of 9·02. There occurred in these experiments, as in those upon males, many exceptions to the general rule of the pulse being less frequent in the recumbent, less so in the sitting, and least so in the standing posture; with this addition, that the exceptions were more numerous in the female than in the male. The first twenty-seven experiments, however, refer to the general rule, and from them all exceptions are excluded: these give, as the mean age, 26·45; as the average of frequency, in the standing posture, 91·33; in the sitting, 84·37; in the recumbent, 79·74.

The exceptions to the general rule are very numerous in the female, and amount, in their several varieties, to as much, on the average, as 46 per cent.

Dr. Guy next proceeds to the examination of the effect of posture on the pulse of pregnant women, and compares them with those of Professor Hohl: there is some little difference of result from these two examinations; but we are not told, in Hohl's experiments, of all the circumstances under which the examinations were made, neither are the ages of the patients mentioned. In Dr. Guy's experiments, the mean age of the persons examined was 29; the frequency of pulse, in the standing posture, 87; in the sitting, 83; in the lying, 80; the differences, 4, 3, and 7. The difference observed in the comparative frequency of the pulse in different postures is greater as the pulse is naturally more frequent. "The pulse of the adult female exceeds in frequency the pulse of the adult male, of the same mean age, by from 10 to 14 beats. In the erect posture, it is more frequent by about $\frac{1}{8}$th; in the sitting posture, by about $\frac{1}{6}$th; and in the recumbent posture, by more than $\frac{1}{5}$th: but, although the pulse of the adult female is more frequent than the pulse of the adult male of the same mean age, the effect of a change from the erect to the recumbent posture in the male is greater than the effect of the same change in the female, by more than $\frac{1}{3}$d."

The influence of posture on the comparative frequency of the pulse is much modified by age. From an examination of the tables referring to this point, it appears that the influence of posture upon the pulse is less in early youth than adult age, and the modifying influence of age is greater in the female than the male.

Dr. Knox, in the paper before referred to, and Dr. Nick* state that the effect of posture on the pulse is much greater in the morning than in the evening; the results of their experiments are both confirmed by those of Dr. Guy. Thus, in the morning, the mere change from the horizontal to the erect posture increased the pulse by about 15 or 20 beats. The results of seven experiments by Dr. Knox gave, as a mean result, a difference of 29 between standing and lying in the morning, and of 21 in the evening. The results of twenty experiments instituted by Dr. Guy gave, as a mean difference, immediately on getting out of bed, of 10 beats in a minute between the recumbent and the standing postures; after dressing, of 7·70; and, immediately before going to bed, of 7·25. These experiments prove that the effect of change of posture is greatest in the forenoon, and least in the afternoon: they likewise establish the fact, first promulgated by Dr. Knox, "that the pulse is less frequent in the evening than the morning. This difference amounts to 11 beats."

The remainder of Dr. Guy's paper is occupied by a comparison between the result of his observations and those of Dr. Graves, made with the revolving board. Here, in the main, they agree: there is some little difference of opinion as to the physiological cause of the difference of frequency of pulse during recumbency and in the erect posture; but this appears to us of little moment. The last experiments were made with the revolving board to ascertain the extent to which the pulse would fall below that of the horizontal posture, by depressing or lowering the body to angles varying between thirty and forty-five degrees; from which Dr. Guy concludes that the natural tendency of the inverted position of the body is to diminish the frequency of the pulse. When the head and body were inverted thirty degrees, the average depression of pulse was $6\frac{1}{2}$ beats; at forty-five degrees, $1\frac{1}{2}$; completely inverted, 7 beats.

These experiments appear to have been performed with great care, and due attention to all circumstances which might have interfered with a correct result. They are physiologically curious; and Dr. Guy deserves the thanks of the profession for the care and assiduity evinced in their institution and performance. We refer the reader to the original paper for a series of tables containing much curious information in reference to the whole subject.

We are pleased to find that the author is engaged in collecting materials for discussing the practical application of the results obtained; and trust that he will at the same time take occasion to elucidate the causes of the numerous exceptions to the general rule, as well as to show the modifying influence exercised by disease of different organs, and more especially of the heart and lungs, both in respect to the rules and the exceptions.

* Beobachtungen über die Bedingungen unter denen die Häufigkeit des Pulses im gesunden Zustand verändert wird. Von G. H. Nick.—Tubingen, 1826. p. 41.

XVI. *Observations on Abdominal Tumours and Intumescence.* By
R. BRIGHT, M.D. F.R.S.—In noticing the Fifth Part of these Reports, in
our last volume, we announced our intention of postponing the review
of Dr. Bright's paper, therein commenced, until its completion. We
know not that it is now completed; still we cannot allow longer time to
pass without making our readers acquainted with its valuable contents.

The first part of Dr. Bright's paper relates exclusively to the "Ace-
phalocyst Hydatid," and is illustrated by fifteen cases of the disease, the
detail of which furnishes very nearly a complete account of the history,
pathology, and termination of this affection. Before entering immedi-
ately upon the subject of abdominal tumours, Dr. Bright devotes a few
pages to the consideration of the regional anatomy of the abdomen. In
this we do not find any addition of consequence to what has already been
said on this subject by Velpeau and others; still this introduction to the
study of abdominal tumours is exceedingly appropriate. It must be re-
collected that the regional anatomy of the abdomen differs materially
from that of the chest. In the latter the organs are fixed, or nearly so,
and in a state of health deviate little in their correspondence with certain
regions of the external surface of the body: in the former, on the con-
trary, nothing is precisely definite; the nature of the viscera, and their
functions, render them constantly liable to changes of situation; and
hence Dr. Bright judiciously observes, " that they are subject to vari-
ations from anomalous formations, from changes as to form and extent,
according to the state and progress of the operations in which they are
destined to assist; we must, of course, be prepared to appreciate and
make allowance for such changes when investigating the condition of the
abdomen, or speaking of the natural contents of its different artificial
divisions."

A plan of the male and female abdomen is given in illustration of this
part of the subject, with some ingenious directions for mapping the
situation of tumours, and their connexion with or relation to the various
organs of the belly.

Dr. Bright prefaces the narration of his cases by a few remarks on the
diagnosis of the acephalocyst hydatid tumour of the abdomen. From
the variety of situation which such tumours may occupy, the symptoms
by which they are accompanied are liable to much variation. This arises
from the nature of the organs with which they are connected, or which,
by their bulk, they compress. The acephalocyst, in the first instance, is
merely characterized by swelling, gradually increasing; an elastic feel,
or sense of fluctuation, when examined by the touch; a smooth or tube-
rose surface; and not, at the commencement, much derangement of the
general health. Dr. Bright mentions a case of encysted cerebriform dis-
ease, which was confounded with the acephalocyst tumour in this
instance: the more rapid progress of the affection, the greater constitu-
tional disturbance, the general irritability of the system, the sallow and
unhealthy complexion of malignant disease, constituted the distinguish-
ing differences between the two affections; although the indications
afforded by appearance and manual examination were similar. Cruveilhier,
in his excellent article "Acephalocyste," in the " Dict. de Médecine et de
Chirurgie pratique," adds nothing to the diagnosis given by Dr. Bright.

As the present communication of Dr. Bright is strictly clinical, we shall endeavour to seize upon those facts of practical utility which the histories of the cases appear more particularly to enforce. The acephalocyst hydatid may become a source of fatal disease in the following ways: 1. By its immense bulk pressing upon and impeding the functions of one or more organs, and thus giving rise to a continual constitutional disturbance, under which the patient gradually emaciates, and dies. This is well exemplified in the first and second cases of Dr. Bright. In the first the tumour, by compressing the stomach and intestines, had caused the absorption of the kidneys, which were reduced to mere membraneous sacs, whilst a portion of the tumour was imbedded in the substance of the liver. In the second case, the liver was forced upwards, the chest compressed to a considerable extent, and the respiration considerably impeded. The small intestines were forced into the left iliac region; the stomach partially compressed; the ureter distended from pressure, and the kidney partially absorbed. 2. The presence of the acephalocyst hydatid may become a cause of death, by exciting a fatal peritonitis. This position is exemplified by the detail of the third case. 3. The fatal issue may be caused by the inflammation and suppuration of the parietes of the hydatid cyst itself. The fourth case of Dr. Bright is an example of this mode of termination. 4. Sudden rupture of the cyst is commonly, though not always, followed by sudden death. The eleventh and twelfth cases are illustrative of this mode of termination. Such are the chief modes in which the acephalocyst gives rise to a fatal termination: we shall presently see the circumstances under which its issue is favorable. Occasionally the situation of the hydatid gives rise to very peculiar and obscure symptoms; of this Dr. Bright brings forward a very singular example. In this case a large acephalocyst hydatid was developed in the pubic region, and attached to the posterior part of the fundus of the bladder, pressing so much forward as to prevent entirely the bladder being filled with urine. This was at once the source of the tumour above the pubes, which was taken for a distended bladder, and explained also the constant escape of the urine, and the reason why none, or very little, followed the introduction of the catheter. The pressure of this tumour upon the ureters had occasioned their great distention by urine, and consequently a degree of pressure upon the kidneys, which had produced a very extensive absorption of the substance of both.

"In cases of so doubtful a kind, we might derive diagnostic marks from the history of the tumour, if the patient had sufficient intelligence to assist us in the enquiry : so likewise from the feel of it, which would probably be harder or less regular than of the bladder; but on this no perfect reliance could be placed. The character of the urine which is drawn off would be almost sufficient to decide the question ; for, if this fluid be retained any time in the bladder, it generally acquires a much darker hue: and all its sensible properties at once bespeak that it has been long secreted, and concentrated or altered by retention."

The spontaneous favorable terminations of the acephalocyst tumour are three: 1. The cyst may be ruptured from accident or from internal causes, the fluid carried away by the absorbents, and the disease return no more. The thirteenth case illustrates this. 2. The cyst may burst externally, the fluid be discharged, and a perfect cure be the result.

Dr. Bright certainly does not record a case of this character: the only one he gives of spontaneous external rupture (Case xv.) terminated fatally by hemorrhage from an hepatic vein. Plater, Guattani, Roux, and Cruveilhier have, however, related cases of the favorable termination of hydatid cysts, spontaneously opening externally. 3. The cysts may open into the kidneys, the stomach, or intestines, and be voided by expectoration or by stool. Of these modes of termination two cases are recorded by Dr. Bright; one in which an acephalocyst hydatid tumour of the liver opened into the lungs, and was voided by expectoration; and a second, (Case xiv.) in which the cysts passed off by the intestines. Many examples of these modes of termination are recorded, more particularly by Rudolphi;* Collet, Merat, and Andral have also collected the most remarkable examples of these terminations on record.

In regard to the treatment of this class of affections in a medical point of view, Dr. Bright offers us little or nothing. He proposes the internal use of turpentine, electricity, and the local application of ice; but mentions these remedies as subjects merely of "fair speculation," as "unsupported conjectures." We have certainly little faith in the medical treatment of the acephalocyst, and the records of medical science furnish us with no data whatever in reference to this subject. Surgery is a little more promising. Dr. Bright brings forward two cases in which the tumours were emptied by paracentesis: one terminated fatally (Case ix.); the other (Case x.) was followed by success. We must note here, however, particularly, that in the fatal case the discharge was purulent, marking inflammation and suppuration of the parietes of the hydatid cyst; whilst, in the successful case, the fluid was perfectly limpid.

The treatment by opening the tumour by incision or puncture is one which has generally been condemned by all surgical writers, particularly by Lassus, (*Journal de Médecine*, tom. i. p. 135;) and the older writers are full of fatal issues to such operations. Cruveilhier's essay contains five fatal cases of puncture: he mentions, however, some cases which have terminated favorably, but thinks that many of the cases which have ended well have been serous cysts, and not the genuine acephalocyst hydatid. Lately it has been proposed to puncture the cyst by way of exploration, with a needle similar to Dr. Davies's for testing thoracic collections: then, if the contents be perfectly healthy, to open the cyst by means of a caustic issue; to use at first emollient, and then gently stimulating injections, with a view of inducing adhesion or contraction of the walls of the cyst. Récamier has reported several successful cases thus treated by him at the Hôtel Dieu.

In his second communication Dr. Bright passes from the consideration of the acephalocyst hydatid to that of tumours having their origin in the ovary. This paper is, if possible, more valuable than the former: it is longer, and contains a detailed account of twenty-six cases of various forms of ovarian disease. As a contribution to pathology it is of inestimable value, forming, as it does, a complete history of certain forms of ovarian disease. In it Dr. Bright notices four distinct forms of ovarian

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* Et procul dubio Hydatidæ ex Hepatis Abscessu in Duodenum penetranti derivandæ. Vol. ii. Par. ii. p. 248.

tumours with fluid contents: 1st. The simple serous cyst. This presents itself as a simple bag, containing serum, whose external surface appears to possess all the attributes of the peritoneum, attached to the surface of the ovary or some neighbouring part, and supplied with blood-vessels from the point whence it arises; sometimes sessile, more frequently attached by a longer or shorter neck; generally single, but occasionally presenting the appearance of being composed of more than one cyst." The simple serous cyst may be congenital; at least, it has been found within a very few moments after birth. It varies in size from a pea to that of an orange. Dr. Bright adduces no case of its having attained to any considerable size, but imagines it may do so: the only cases he gives of this affection (i. and ii.) were discovered after death, in patients dying from other diseases. In one case the age was five months, in the second eighteen years.

The second ovarian tumour consists in a serous distention of the Fallopian tube. Dr. Bright has not observed any instance of this affection sufficiently large to form a distinct elevation above the pubes. Other forms of distention of the Fallopian tube occur in the shape of purulent or scrofulous deposits: these are usually complicated with scrofula or inflammatory affections of the peritoneum.

The third form of tumour, " as a separate disease distinct from others very doubtful," consists " of a simple vesicular body, developed beneath the proper tunic of the ovary; supposed to be produced by an accumulation of fluid in one of the Graafian vesicles." Dr. Bright believes that the large cyst filling the abdomen, which has been sometimes supposed to be the distended Graafian vesicle, is, in fact, the malignant encysted tumour of the ovary. There occurs a condition of the Graafian vesicle, in which " a coagulum more or less stained with blood, or of a somewhat glutinous character, is collected in the vesicle, distending it to the size of a hazel-nut, or sometimes larger." This is not of a malignant character.

The fourth example of ovarian tumour, by far the most frequent, is that which is known commonly under the name of encysted dropsy of the ovary. This tumour Dr. Bright believes to be most frequently of a true malignant character, " essentially a specific disease." In the opinion of Dr. B., this form of tumour originates in the cellular substance of the ovary, involving during its progress the whole substance of the organ, so that it is often quite impossible to say whether it be the meshes of the cellular tissue or of the vesicles of De Graaf which are become the seats of the morbid deposits, or to what extent new structures have been generated." Many of the continental pathologists consider these tumours to originate in the Graafian vesicles.

Passing over the consideration of the symptoms, &c. of the first three forms of tumour, which are not of sufficient importance to detain us, we come to notice the earlier symptoms attendant upon the malignant simple or compound ovarian cyst, as this is a subject of vast importance to the practical physician and surgeon.

" This form of disease seldom shows itself much before the twentieth year, and generally much later; and is not, like the simple cyst, unexpectedly discovered during the examination of children or young persons who have died from other diseases. The first recognized symptom is usually a tumour, not altogether devoid of pain, in one

of the inguinal regions; and which, on examination, evidently rises out of one side of the pelvis, and even at this early period is sometimes lobulated or uneven in its form, and unequal in the resistance its different parts afford on pressure. The growth of this tumour is, on some occasions, so unperceived, that, though it may have originated on one side, it has already risen into the pubic and even into the umbilical region; and, when the medical man is first consulted, its lateral origin is with difficulty ascertained. At other times the enlargement is at first slow, and, after some indefinite period of time, the increase takes place suddenly; so that, in a few months, the whole abdomen presents, to a common observer, the size and appearance of pregnancy far advanced." (p. 184.)

Were the histories of diseases clearly and truly detailed to the medical attendant, little comparative difficulty would be experienced in our diagnosis: unhappily, however, this is not the case, and hence considerable embarrassment sometimes arises in forming a correct opinion. Thus, when a gradual enlargement of the abdomen follows the cessation of the catamenia, the case is apt to be mistaken for pregnancy. This happened in the eleventh case detailed by Dr. Bright. Another case is also given of the complication of ovarian disease with pregnancy at page 261. The ovarian cyst may, at certain periods of its history, be confounded with pregnancy; it may simulate or coexist with it. In these instances we must be guided by the history of the disease, the examination per vaginam, and—what Dr. Bright does not mention but which is of vast importance at the period we are called upon to investigate the nature of the affection—auscultation. The ovarian tumour might also be confounded with malignant disease of the fundus of the uterus: from this, the more central situation of the latter will, in some measure, distinguish it. "The hardness of the tumour, and the peculiar abrupt nodules which the diseased uterus presents, contrasts well with the soft and yielding feel which the subsidiary tumours of the compound ovarian cyst usually afford." The ovarian disease might also be confounded, in its incipient state, with a distended or thickened bladder, or an acephalocyst tumour of pelvic origin, as in a case already detailed. In its advanced stages, it might be confounded with hysterical tympanitis. Dr. B. relates a curious case (xxvi.) of a patient labouring under hysterical tympanitis, who was tapped under the supposition that she had ovarian dropsy.

The ovarian tumour, in its earlier stages, commonly presents an uneven surface to the hand: the greater rotundity or projection of one part over another will at this time be apparent. In the advanced stages, the distension of the cyst by fluid gives to the abdomen a rounded form, which contrasts it with the ovoid appearance of ascites. On examination by moderately hard pressure with the hand, a general sense of fluctuation is perceived; interrupted occasionally, if the abdomen be not too tense, by considerable masses of unyielding matter. These, from their situation, might sometimes lead to the supposition that the liver, spleen, or kidneys are involved in the disease: the tumours thus felt, however, are smaller cysts developed in the interior of the parent cyst, giving rise to that kind of tumour which Dr. Bright terms the compound. When the fluid is drawn off from the chief cyst by paracentesis, the more distinct feel of these smaller cysts leaves no doubts as to the character of the disease.

We agree with Dr. Bright that percussion is of vast service in the

diagnosis of cases of this description, particularly when the ovarian tumour gradually pushes away the hollow viscera to the opposite side from whence the disease had its origin.   " In ascites, the hollow viscera, as long as the peritoneum has undergone no change, float on the surface of the fluid, in whatever position the body may be placed."   In ovarian disease, the hollow viscera are constantly on the side opposite to the tumour.

The prognosis in ovarian disease is generally unfavorable: in addition to its generally malignant character, the disease is sometimes combined with scirrhus or tubercular deposits in other organs, as the mammæ, the liver, the glands generally, and the subcutaneous cellular membrane of the abdomen.   The bulk of the tumour may so far compress the viscera of the abdomen, or encroach upon the chest, as to render an operation actually necessary.   This, a mere palliative measure, may relieve the symptoms for a time: the cyst, however, soon again fills; a second operation is required, and the patient sinks, worn out by the prolonged irritation of the disease, or by accidents to which the operation itself has given rise.

The more frequent accidents that succeed to paracentesis are sudden sinking, peritoneal inflammation, and diseased conditions of the lining membrane of the sac itself.   In the latter instance, the mucilaginous fluid, resembling linseed tea, which was drawn off in the first operation, gradually becomes more turbid and offensive, till, in succeeding operations, it is purulent.   In examining cases of this description, the lining membrane of the cyst is generally found inflamed and ulcerated.   In some instances the cyst is ruptured internally, and a speedily fatal result is the consequence.   Again, the cyst may become united by inflammation to the intestines, ulceration be set up, and the contents discharged. Dr. Bright relates a remarkable example of this mode of termination: the discharge took place into the cæcum, and the patient ultimately sunk from intestinal irritation.

Little can be said of the treatment of this formidable disease.   Dr. Bright, in our opinion very justly, condemns the attempt at removal by operation.   Whilst medical science offers no remedy which can act specifically upon the disease, attention to the general health may do much in retarding its development.   Our chief indications are to subdue local and general excessive action, and to maintain the strength.   For these purposes "small local bleedings, blisters, and counter-irritation, mild bitters and tonics, the taraxacum and sarsaparilla, the alkalies, and various narcotics," are to be used as circumstances may require.

Dr. Bright concludes his paper with some remarks on the manner and time of performing the operation of paracentesis.   This should not be done in the earlier period of the disease; neither should it be delayed till the bulk of the tumour compresses the chest, or injures by its weight any of the organs of the abdomen; of which occurrences Dr. Bright's paper affords many examples.   When the tumour has distended the belly to the size of pregnancy, the operation should be resorted to.   Before operating, the surface of the tumour should be most carefully examined, in order to ascertain, as far as possible, the part in which the fluid is chiefly accumulated, that we may not push the trocar into a secondary cyst. In one example (Case xv.) the operator passed the trocar into a firm

band, formed by the broad ligament of the uterus and the fallopian tube stretched over the tumour. "Very careful manual examination might possibly prevent such an accident." It is sufficient to mention the probability of this, to render the operator extremely watchful against its occurrence. The bladder should be emptied before operation, and the condition of the uterus ascertained per vaginam. The necessity of these precautions must be obvious to all. In conclusion, Dr. Bright recommends all the fluid that can be conveniently abstracted to be taken away; for, above all accidents, he dreads the escape of any into the peritoneum. If we can ascertain whether any adhesion has taken place between the tumour and the abdominal parietes, the point of union is the place for our incision.—This, although not a complete history of ovarian diseases, which Dr. Bright does not profess it to be, is the most valuable monograph on the subject of the encysted dropsy of the ovaries with which we are acquainted.

The third communication of Dr. Bright's is limited to the consideration of diseases of the spleen. It is illustrated by twenty-eight cases of different forms of splenic disease, occurring singly, in their connexion with different morbid states of the economy at large, or with affections of different organs concerned in the digestive process, with which the spleen appears to have some obscure connexion. The degree of doubt and uncertainty which hangs over the functions of the spleen deprives its pathology of that interest which is attached to affections of other organs, whose functions and importance to the economy are better understood. We are of opinion that a catalogue of mere pathological changes, which have no bearing upon either physiology or therapeutics, is, in the present state of our knowledge, a matter of simple medical curiosity, or, as Dr. Bright elegantly says, "an alphabet for the construction of a language, into which we may *hereafter* translate the complicated and obscure legends of disease."

Dr. Bright's paper commences with some remarks upon the relative anatomy of the spleen; the author then gives a sketch of its general pathology; devotes a few considerations to the diagnosis of its diseases; and terminates with a detail of the cases. We see little worth noticing in the first part of the paper. After mentioning the situation of the spleen, and its general diversity of size, Dr. Bright informs us that, "great as this variety is, and great as is the occasional increase of this organ, it perhaps never, in its healthy state, descends below the margin of the ribs, or becomes sensible to the touch in that part of the abdomen."

The pathological changes chiefly noticed in the spleen are simple congestion; congestion with enlargement; fleshy hardness; fleshy hardness with enlargement; softening; inflammation; suppuration; gangrene; tubercles; malignant disease; melanosis; fibrinous deposits; bony deposits; cellular degeneration; hydatids; laceration; supernumerary spleens. The morbid conditions which Dr. Bright enumerates as proper to the peritoneal investment of the spleen are inflammation; ecchymosis; adhesions; fibrinous deposits; cartilaginous deposits; bony deposits; cicatrices; tubercles; and malignant deposits. This catalogue does not add anything to our knowledge on the subject of the pathology of the spleen: with the mere exception of tubercles and hydatids, it is

pretty nearly the same account as that given by Portal, in 1803; since which period the subject of the acephalocyst of the spleen has been fully investigated by Cruveilhier. The local symptoms of certain diseases of the spleen consist chiefly in pain, tenderness on pressure, and distinct tumefaction; and such symptoms are common to those diseases of the spleen which consist in congestion, inflammation, or hypertrophy. It must be evident that a great number of the affections of this organ are not attended with symptoms of a character sufficiently marked to enable us to determine upon their nature during life; for example, abscesses of the spleen. Dr. Bright records two cases of abscess of this organ, bursting, one into the stomach and the other into the colon, in which nothing more than a conjectural diagnosis could be attempted. A great majority of cases of disease in this organ must necessarily be of the same character. The difficulties in diagnosis here principally arise from the situation of the spleen, the great obscurity hanging over its functions, and the degree of its importance to the economy at large. " The pain accompanying splenic disease is seldom acute, unless the peritoneal covering of the organ be inflamed; and then, owing to the proximity of so many other parts, as the heart, the lungs, the diaphragm, the stomach, the left kidney, and the colon, it is very difficult to localize; although, by the method of abstracting one by one of the organs, in proof of the lesions of which certain other symptoms are wanting, we may come to the conclusion that the pain belongs to the spleen."

Diseases of the spleen may be confounded with those of many other organs which are situated in its vicinity. These are chiefly "chronic abscess of the integuments; scirrhous thickening of the stomach; enlargement of the left lobe of the liver; diseased omentum; feculent accumulation in the colon; diseased kidney; ovarian dropsy; hydatids." The chronic abscess of the integuments is too superficial or too soft to be reasonably confounded with disease of an internal viscus, particularly one whose structure is so solid as the spleen. Some difficulty may arise in establishing a differential diagnosis between a scirrhoid thickening of the stomach and disease of the spleen. " In this case one of the best distinctive marks will be the sound elicited by percussion." The sound will be clear in thickening of the stomach, dull in disease of the spleen. Feculent accumulation in the intestines is very likely to be confounded with disease of the spleen, particularly when the accumulation exists in the descending colon and left portion of the arch. In these cases we must be guided by the history of the disease and the effects of remedies. " Nor must we, without the most persevering employ of purgatives, hastily conclude that the intestines have been emptied." Again, disease of the left kidney, in many of its features, simulates disease of the spleen. The chief distinctive marks are here the history of the disease, some probable changes in the properties of the urine, the more fixed tumefaction when the kidney is diseased, (it being situated further back than the splenic tumour would be,) and its not falling forwards when the patient is placed on his hands and knees. "On careful examination by percussion, also, we shall find there is reason to conclude that the intestine lies between the tumour and the integuments of the lower part of the abdomen when the kidney is enlarged."

Of the treatment of diseases of the spleen Dr. Bright says little. The

frequency of the connexion of such states with affections of the economy generally, or with some portion of the digestive, absorbent, renal, or glandular systems, prevents us, in many instances, directing our treatment especially to the diseases of this organ, even when these are obvious. In such conditions, the treatment of the affection of the spleen becomes secondary to that of the general state of the economy, or any of its chief systems. In well-marked acute affections of this organ with enlargement, as in the first and second cases given by Dr. Bright, local bleedings, with purgatives and tonics, are indicated.

This paper concludes, for the present, the pathological contributions of Dr. Bright. It is not of so much interest as the two former; neither does it present as much novelty, not laying before us any new facts in the history of splenic diseases. Still it is of great merit: it gives us more facts, furnishes us with more data, and establishes a firmer and broader basis on which to build a correct diagnosis. We feel deeply indebted to Dr. Bright for these and former communications, and doubt not the profession at large will join with us in hoping that he may be enabled to proceed with his interesting enquiries, by the part of which already published he has laid his brethren throughout the world under important obligations.

Art. VII.

Bemerkungen über den Brand der Kinder.   Von Dr. ADOLPH LEOPOLD
   RICHTER. &c.—*Berlin*, 1834.   4to. pp. 22.
Observations on Infantile Gangrene.   By Dr. A. L. RICHTER.—*Berlin*,
   1834.   4to. pp. 22.

THIS short essay was published on the occasion of celebrating the completion of the fiftieth year of public service, by the venerable military Physician-General, Dr. Von Wiebel, now four years since. It has, however, only recenly come into our hands, and we deem its contents of too much value to be kept any longer from the knowledge of our readers.

Under the term Kinderbrand, or Infantile Gangrene, are included by Dr. Richter three varieties of the same disease, or what have been described by others as three distinct diseases, occurring in infants, viz. cancer aquaticus, water-canker or noma, sphacelus of the labia, and infantile gangrene, or gangrene of the newly-born. These several affections are considered as merely varieties of one and the same disease, differing chiefly in the situation which they occupy, and the nature of the animal organs and tissues involved. The points of similarity by which he thinks their essential identity is established are as follows: the occurrence of the several varieties in the most tender age of infant life, in children who through defective nursing and nourishment, dyscrasia, and exhaustion left by preceding diseases, have been much debilitated; the simultaneous development of more than one of these forms in the same individual; the formation of a grey lead-coloured rounded spot (in the mouth and upon the parts of generation,) followed by tense swelling and hardness of the part, which is, at its circumference, of a pale red tint, passing gradually into the colour of the surrounding skin: quick transition of the grey-colour into black; rapid extension of the disease and destruction of the

surrounding parts by the formation of a dry gangrenous eschar, or in a few cases of a sphacelating ulcer; and general sinking terminating in death; or, if the remedies used are successful in limiting the spread of the disease, the separation of the mortified parts by the formation of a line of demarcation and surrounding inflammation, with rapid restoration of the parts destroyed in cases where the infantile organism will bear the reaction.

Notwithstanding these points of resemblance, we are inclined to question the propriety of classing, under one name, affections apparently differing so much from each other as do those now under consideration. One important end of nosological distinction is, that we may the more readily acquire correct information respecting the various disorders which we are called upon to treat; and it would doubtless add much to the apparent simplicity of our systems, to bring together under one head, all those diseases which are in essence the same—for instance, pleuritis and peritonitis, bronchitis and muco-enteritis, &c. But we question much whether such a system would be found equally simple at the bedside of the patient, or that it would lead to any improvement in practical results. It is, however, eminently useful to bear in mind the analogies, or, if the phrase is preferred, the intimate relations of disease: the objection is to the carrying of system to such an extent as to interfere with that closeness of description to which the separate consideration of the same diseased action, manifesting itself under different circumstances of locality, whether of region, organ, or tissue, so clearly leads.

1. *Water Canker* (Wasserkrebs), or, as we should rather term it, *gangrene of the mouth*, is characterized by the appearance of a gangrenous spot in some part of the mouth, which rapidly spreads and destroys the structure of the surrounding tissues. General languor, peevishness, disinclination for play or exertion, frequent whining, irritability, tendency to sleep, but without rest; loss of appetite, increase of thirst, nausea or actual vomiting, diarrhœa or constipation, &c. are observed to precede the actual formation of the disease. Dr. Richter describes three varieties, which he terms the *scorbutic*, the *gastric*, and the *metastatic* Wasserkrebs.

a. In the first of these the gums become tumid, livid, hot, and bleed readily; the salivary glands swell, the secretion of saliva is increased and vitiated; the gums part from the alveolar processes; the teeth become loose and incrusted with a foul mucous secretion. After this scorbutic state has continued for a few days or weeks, grey, lead-coloured, gangrenous spots form on the gum, which rapidly increase, run one into another, and pass into a sphacelating ulcer, or become at once black and dry, and exhibit only a mass of slough. If the progress of the affection cannot be checked, the gangrene spreads to the lips and surrounding parts, even as far as the cheeks, which become swollen, hard, flushed, glistening, and burning hot. The odour becomes cadaverous, and with the appearance of low fever, accompanied with colliquative symptoms and collapse, the destructive process extends over the walls of the mouth in such a manner, that in some cases the tongue and throat may be seen from without covered with gangrenous spots. The maxillary bones themselves are attacked, and considerable portions of them, as well as the teeth, are destroyed. In such circumstances death is commonly the in-

evitable result, since the body, already much weakened by the existing scorbutic affection, is deprived of its remaining powers by the overwhelming force of the disease.

b. In the second or gastric form of the disease, the gangrene does not show itself, as in the preceding variety, first upon the gums; but after the occurrence of symptoms of disorder of the digestive system with which aphthæ are associated, it breaks out upon the inner surface of the cheek, or at one of the angles of the mouth. Increased secretion of saliva, which has a peculiar odour, with asthenic swelling, as above described, and secondary fever, shows itself, and at the same time on some part of the inner surface of the cheek, where externally a hard knot may be felt, a small discoloured vesicle appears. This vesicle, which, in consequence of the friends not apprehending change, is liable to be overlooked, bursts, and in a short time passes into a round, foul, and sphacelating ulcer, with red circumscribing edges, which continually extends itself both superficially and in depth, and at length perforates the cheek ; an ash-coloured livid spot, red at the edge, having previously appeared on the external surface. The progress of the gangrene lays open the cavity of the mouth in a few days, to a great extent, attacking more or less the gums and maxilla, and the child quickly perishes with the constitutional symptoms before mentioned.

c. In the third form, which this author would seem to regard as the result of metastasis, though as it appears to us without sufficient grounds, the premonitory symptoms are of course the symptoms of the disease which precedes this attack, whether small-pox, scarlet fever, roseola, measles, fevers of different types, or inflammation. The destructive process in this form breaks out suddenly, and commences also in the neighbourhood of the cavity of the mouth. After the formation of an asthenic, hard tumour, a red spot arises on the mucous membrane, where externally a hard lump may be felt, which becomes gangrenous, and is circumscribed with a red border. This spot steadily increases, the mortification extending also in depth, and the progress of the destruction may be traced from hour to hour on the outer surface of the cheek, by the progress of the boundary line, as the inner surface becomes more and more involved in the disease. The formation of a sphacelating ulcer with secretion, as in the preceding variety, is not observed to occur, the destructive process resembling rather a mummification from the drying up of the dead macerated parts.

The three states here described will be readily recognized by our readers, as, though not clearly pointed out in systematic works, they are not, at least the first and third forms, of very infrequent occurrence. We cannot but think, however, that the first variety is incorrectly united with the other two, since it differs essentially both in its origin and progress. It is, in fact, nothing more than a high degree of scorbutus, and so far from being confined to children may, in its essential symptoms at least, occur in those of more advanced age. We have had occasion to observe the occurrence of the third form also in a young woman, during the course of typhoid fever, in which case the symptoms in no respect differed from those occurring in children. The patient recovered after having suffered the loss of a considerable portion of the right cheek and corresponding side of the under lip. Dr. Richter's term of

Kinderbrand, therefore, is no more appropriate than some of the names assigned to the disease which he criticises. The amount of destruction, even in some of the cases which recover, is frightful; in one which we have recently seen in a boy, eight years of age, also after fever, upwards of half the under lip, and a third of the upper lip are gone; the gums, teeth, and cavity of the mouth are exposed, and a portion of the gum and alveolar process of the under jaw destroyed. The process of reparation has, however, commenced, and there is every prospect of ultimate recovery.

2. *Mortification of the external parts of Generation in Female Infants and Children.* This affection has been noticed by several authors, British as well as foreign; among others, by J. V. Müller, Daniel, Kinder Wood, Thomson, Isnard, Cevoule, Hall, James, Burns, Wiegand, &c. It is, however, by no means of so frequent occurrence as gangrene of the mouth; and it may, perhaps, admit of a question, whether precisely the same affection is intended by the several authors enumerated. Müller, Isnard, Cevoule, and Burns, with the author of this treatise, regard this disease as identical with the gangrene of the mouth, but the cases related by Mr. Kinder Wood, (*Medico-Chirurgical Transactions*, vol. vii.) and referred to by Professor Burns, do not appear to us absolutely of the same nature with the disease described by Dr. Richter, from whom we condense the following account. After the system has been debilitated by preceding disease, there is observed general languor, headach, sickness, loss of appetite, and in very delicate children even symptoms of mild fever, which are succeeded by burning pain in the organs of generation, and the formation of a pale red, circumscribed spot on the inner surface of the labia, and on the nymphæ, together with hard swelling of the surrounding parts extending to the pubis. This state gives rise to considerable irritation and pain in passing water, and in two or three days the inner surface of the labia majora, and parts around, appear grey and ash-coloured. The spots have a circumscribed appearance, and are red at the edge, and the whole of the external parts are pale-red, hot, and swollen. If the progress of the disease is not checked, the grey colour of the spots becomes black and the mortification spreads over the perineum on the one side, and the superior commissure of the genital organs on the other. The excretion of urine becomes difficult or wholly suppressed, the pulse accelerated and small, the countenance sunken, diarrhœa supervenes, and the children die suddenly after the exhaustion has reached its highest pitch, often without any disturbance of the sensorial functions. Sometimes there is a secretion of a foul, corroding, fetid ichor; sometimes the gangrenous eschar becomes hard, and is torn off by the patients piecemeal. When, however, it is possible to put a stop to the destructive process, a line of demarcation forms at the red margin, the inflammation of the surrounding parts increases, the eschar contracts and is thrown off amid the secretion of pus, which becomes gradually of a good quality, and the ultimate loss of substance, partly from the filling up by granulation, partly from the drawing together of the neighbouring parts, is often, apparently, very inconsiderable.

This account of the symptoms and progress of the affection in the genital organs manifests, it must be owned, considerable resemblance to

the gangrene of the mouth, before described; and the opinion which advocates the identity of the two affections is materially strengthened by their simultaneous occurrence in the same individual. An anonymous author, in Hecker's Annalen for April, 1829, mentions a case in a girl three years of age, in which, on the nineteenth day after the development of the disease in the mouth, gangrenous spots also appeared on the genitals, and another in which the gangrene was observed first on the genitals, and subsequently attacked the face. Notwithstanding these facts, however, a careful consideration of the subject leads us to conclude, either that the disease of the mouth and that of the organs of generation, are distinct affections, or that there exists another form of gangrene attacking the genitals of young females, in addition to the one described by Dr. Richter, and the mortification occasionally following infantile erysipelas. To this third form of gangrene must be referred the two cases related by Mr. Kinder Wood, which, whether distinct from the affection described by Dr. Richter or not, are, as it appears to us, altogether a different disease from the cases of gangrene of the mouth, which we have ourselves witnessed. The following is the first and mildest case reported by Mr. Wood, selected for quotation on account of its being the shortest.

"Miss R., aged six years, had complained three or four days of headach; had been chilly, and occasionally hot; she had been sickly, and taken little food; was dull, heavy, and languid. This morning (Jan. 22, 1815), she had complained of pain in making water: upon examination the pudendum was found inflamed; upon which I was called in. The inner surface of the left labium was ulcerated, as well as the clitoris; the right labium was inflamed, and the whole parts tumefied, of a dark purple hue, not unlike some kinds of erysipelas; the mons veneris was enlarged and inflamed; the perineum was inflamed and covered with aphthæ, which also encircled the anus; the discharge was thin, copious, and offensive, and had inflamed the top of the thigh, where it had been suffered to remain. The face had a peculiar paleness; the bowels were slow; the pulse quick and weak; the appetite diminished; the tongue of a dull clay colour, she was thirsty, complained of chilliness, and was indisposed for motion. The liquor plumbi acetatis dilutus was ordered as a lotion, to be applied lukewarm; and poultices made up with the same fluid were directed. A decoction of bark was also given with confectio cardiaca. By the use of these means, the enlargement of the parts gradually subsided, the foul bottom of the sores became red, after which the ointment of white lead was used, and the parts healed by the 14th of February."

The second case is similar but more severe, mention being again made of the occurrence of aphthæ and clusters of vesicles. What the fatal cases may have been does not appear, as they are not related.

3. *Gangrene of the Skin.* Of this form of the disease Dr. Richter relates the case of a child, in whom, after an attack of measles, which had advanced irregularly, there appeared upon the lips, near the angles of the mouth, and upon the outer surface of the cheek, several gangrenous, brownish-black spots, with red edges, from the size of a lentil to that of a fourpenny piece (Groschen), without disturbance of the general health. The gangrenous destruction had here arisen from a red spot in the outer skin, which, within forty-eight hours had acquired, first a grey, and then a black colour. The gangrenous eschars fell off and the loss of substance was soon repaired, amid the secretion of well-formed pus. In another place, near the angle of the mouth, on the right side, after the separation of the eschar, the ulcer beneath was

found to be funnel-shaped, and, as was ascertained by passing a probe, had perforated the cheek. Some cases are then mentioned of gangrene occurring in the fœtal state, which, as it appears to us, have nothing whatever in common with the diseases under consideration. The following instance related by Romberg in Rust's Magazin, is more to the purpose. In a child, fifteen months old, eleven days after the eruption of the measles, a dark-brown roundish spot, of the size of a pea, appeared upon the under lip; and a second, of similar character, showed itself in the centre of the right cheek, which, in forty-eight hours, increased much in size. At the same time a round bladder, of a dark-blue colour, was observed in the interstice between the thumb and fore-finger of the left hand. On the fifth day the spots on the face had the appearance of an eschar formed by means of caustic potash, became detached, and left a perforation both of the cheek and of the lip. The bladder on the hand dried up to a black crust, which was partially loosened, and showed an apparently deep, penetrating destruction of the cellular tissue. Healthy granulations were subsequently formed, both upon the cheek and the hand. We are disposed to view both this case, and the one before mentioned, as instances of the genuine form of gangrene of the mouth; the following is of a more questionable nature, and is that to which the name of infantile gangrene of the skin more correctly applies. It is related at length by Martini, in the twenty-seventh volume of Rust's Magazine, under the name of gangræna infantilis, and occurred in a small weakly infant eight days old, and of premature birth, which was too feeble to draw milk from the breast. The nurse observed, on a sudden, black spots on both legs near the feet; when the physician was called in, he saw both legs above the joint, gangrened all round for the breadth of two inches. The skin was bluish-black, dry, cold, separated from the healthy skin of the neighbouring parts (which were not swollen) by a sharp edge. On the left foot the appearance extended over the heel and a part of the sole of the foot. There was no other appearance of disease. The surrounding skin soon inflamed, and in three days both extremities had become swollen and painful; the strength failed, a bloody swelling on the head became at the same time gangrenous, and four days from the occurrence of the first trace of disease, the child died amid convulsions. According to Billard, who describes this affection under the name of gangræna neonatorum, it is distinct from infantile erysipelas, and is owing rather to impeded circulation in the capillary vessels, and congestion of imperfectly arterialized blood in the skin and subcutaneous cellular tissue. He states, that it usually commences on the fingers and toes, though it also occurs on the arms and legs. The skin around the nails becomes bluish-red, swells or retracts; shrivels up, or becomes covered with small bladders containing a bluish serosity, which exudes and is followed by discoloured excoriations, emphysema, and a gangrenous odour. The sick remain almost motionless, insensible, scarcely respiring, and utter a hoarse plaintive cry; the abdomen swells, different parts of the body become œdematous, and gangrenous spots or petechiæ appear on the limbs and trunk.

Dr. Richter, in the treatise before us, considers next in succession the nature of the disease, the etiology, the prognosis, and the treatment.

Upon these we need not dilate at any length. The nature of these several forms of disease is sufficiently evident from what has gone before, and the reader will be at no loss to gather our own opinion as to the distinct character of some of the affections here described from the remarks which we have had occasion to make. The causes, as far as they are known, would seem to be, speaking in general terms, whatever tends to depress and debilitate the powers of the constitution, e. g. original want of power or strength in the organization, as shown in weakly children, or those prematurely born; imperfect nourishment, want of cleanliness and care, confined or impure atmosphere, and the weakening process of preceding diseases, more especially of such as are in themselves diseases of debility, or in which an asthenic state is liable to occur. The prognosis is unfavorable in proportion as these causes are in greater activity. The treatment, it is scarcely necessary to say, should consist in paying every attention to cleanliness and ventilation, and to the affording of nourishment fitted for the support of the powers of life; in the exhibition of wine, quinine, and other tonic remedies, and in the local use of lotions and poultices with chloride of lime, camphor, and other means, which the greater or less tendency to sloughing on the one hand, or to inflammation on the other, will readily suggest to the well-informed and observant practitioner.

We may, in conclusion, state that we are inclined to recognize the following distinct forms of infantile gangrene, as described by Dr. Richter and others: 1st. Gangrene of the gums and mouth arising from a high degree of scorbutus; this is Dr. Richter's first variety of cancer aquaticus. 2d. Gangrene of the mouth from loss of power, including the second and third varieties of cancer aquaticus, with some of the cases referred by the author to gangrene of the skin. 3d. Sphacelus of the genitals, nearly allied to the preceding form, and sometimes occurring in connexion with it. 4th. Vesicular inflammation (herpes?) of the labia, with tendency to gangrene, of which the cases related by Mr. Wood are examples. 5th. Infantile gangrene of the skin, described by Billard, under the name of gangræna neonatorum, to which a part of Dr. Richter's description applies. 6th. The gangrene which occasionally follows erysipelas in infants.

Art. VIII.

A Dialogue between a Bilious Patient and a Physician. By James Henry, m.d., Fellow of the College of Physicians, Dublin. *Third Edition.—Dublin*, 1838. 8vo. pp. 52.

This is one of the most sensible productions we have met with for a long time, and is, in our opinion, calculated to do much good, not only to the innumerable lay dabblers in physic, who come within the class of " bilious," but to the grave professors of legitimate medicine themselves. It is written in an accurate and pure style, and the whole of the argument is so clearly placed before the reader, and is so logically and forcibly reasoned throughout, that it cannot fail to produce a decided effect on the mind of every sensible and unprejudiced man. The great object

which the author has in view is " to show that the habitual use of purgatives
is injurious to health, and that the diseases commonly denominated nervous
and bilious cannot be cured by these medicines, nor indeed by any medicines
whatever, but solely by avoiding the causes from which those diseases
spring:" and it would appear from his preface that, on this account, he
has been accused of a desire to depreciate medicines and the art of medi-
cine. We, however, entirely acquit him from such a charge; being
thoroughly convinced that the true interests of the medical profession can
never suffer from enlightened attempts to instruct the public on the sub-
ject of their health, and feeling, with the author, assured "that, in
attempting to correct, as far as in his power, a great medical abuse, he
is doing that which not only will not diminish, but on the contrary will
increase and promote, a rational confidence in the healing art." It is not
to writers like Dr. Henry, who come openly forward to disseminate the
great truths of physic, without any self-interested motive, that the
guardians of professional honour will ever seek to apply the lash, but to
those base and dishonest men who, under the thin pretence of commu-
nicating information to the public, plot in reality how they may lure
them into their toils.

   In the first part of the dialogue, a vivid picture is drawn of the misery
of a bilious or dyspeptic and nervous patient, and of the flattering but
delusive and merely temporary relief afforded by purgatives; a picture, of
which every physician will admit the truth, who has had much experience
in such cases, and who knows the ordinary mode of treatment of them by
routine practitioners or the patients themselves.   After a complete ex-
posure of the inadequacy and injurious effects of the purging practice,
the author—in reply to his patient's objection that "the necessity for a
purgative is sometimes so pressing that present relief must be sought for,
regardless of future consequences;" and that " the sentence of condem-
nation cannot be pronounced against those mildly opening and alterative
medicines which neither sicken nor gripe, but merely give a gentle sti-
mulus to the bowels, and assist their natural action;"—enters into an
elaborate discussion to show that the established creed respecting the
necessity of having a daily evacuation of a certain consistence and
colour is utterly false: it thus concludes:

   " I have now shown you that your opinion, that it is necessary to good health that
the stools should be brought, by the aid of purgatives, to agree with a certain as-
sumed standard, either with respect to frequency, or colour, or consistence, is
opposed, 1st, by your own experience of the utter futility of all attempts to render
your bowels more regular by the aid of purgative medicines. 2dly. By my medical
experience of the same fact with respect to other persons. 3dly. By my medical ex-
perience that such attempts are not only futile but ruinous to the health. 4thly. By
my medical experience of the great variety that obtains in the stools of healthy persons,
both with respect to their number, colour, and consistence; or, if I may so say, by
my medical experience of the non-existence of a fixed standard for the stools. 5thly.
By the principles of physiology, which show that the stools of healthy persons must
of necessity vary, and cannot by possibility be reduced to a fixed standard." (p. 27.)

   He accounts for the great popularity, or, we may indeed say, the
nearly universal use of purgative medicines, by the great immediate
relief afforded by them, by the real or supposed facilities they furnish for
the indulgence in luxurious habits, by the fear that constipation, if

unchecked, may lead to dangerous results, by the influence of tradition-
ary opinion, by the misapprehension of the advice of Locke given in his
Essay on Education, and by the direct and most extended authority of
the late Mr. Abernethy, (the author might have added Dr. Hamilton,)
and by the great recommendation of the practice to British practitioners
from its simplicity and facility, and its harmonizing so happily with the
empirical and *effective* practice so long characteristic of medical practice
in this country; and, finally, by the efforts of the host of pill-makers,
called into existence by these potent and multifarious causes on the in-
fallible principle of statistical economy that supply will follow demand.
These last two causes are happily explained in the following passage:

"Under this system a careful and laborious investigation into the particular cir-
cumstances of each case was no longer necessary: well prepared with his purgatives,
the physician was ready for every case which might occur. If he understood the case,
he gave purgatives, because he was convinced that they were required; if he did not
understand the case, or had not leisure, or inclination, or ability to investigate it, he still
gave purgatives; and thus, if he did not cure, he at least purged the patient, and so
avoided the appearance of not knowing what should be done, and of standing an idle
and inactive spectator of the progress of the disease. Thus were purgatives at one
and the same time the offensive and defensive armour of the physician; the keen
weapons with which he combated all diseases, and the secure coat of mail which
covered his own ignorance, incapacity, or inattention. The practice of physicians to
prescribe and recommend opening medicines, and the general use made of them by
the public, produced of course a great demand for medicines of this class: the manu-
facture and sale of purgatives therefore became a profitable employment, and was
carried on extensively by great numbers of persons, who, deriving large incomes from
the sale of their medicines, took infinite pains, by means of advertisements in all the
newspapers and periodicals, and by agents in almost every town in the empire, to give
notoriety and celebrity to their nostrums, and at the same time to keep up the credit
of the purging system, on which the sale of their drugs, and of course their revenues,
entirely depended." (p. 35.)

Having convinced his patient of the groundlessness of the system of
curing bilious complaints by purgatives, and of the utter inadequacy of
these means to accomplish the end desired, the physician enters upon
the exposition of his own *rational* system, which has the great merit of
containing nothing that is novel, and nothing but what every experienced
physician, who is accustomed to think and reason as well as to observe
and prescribe, will admit the truth of. This system comprehends merely
due attention to air, exercise, and diet.

"Your symptoms having arisen from the inability of your stomach properly to
digest your food, and air and exercise affording the natural, and certain, and well-
known means of strengthening the stomach and increasing its digestive power, it
follows that if your stomach is not (as I believe it is not) already injured beyond re-
covery, and if you are careful not to injure it in future, you have only to take suffi-
cient exercise in the open air, in order to render your stomach equal to the digestion
of your food, and so obtain the perfect recovery of your health. You have for many
years lived an anxious, sedentary life; you have passed much of your time in close,
badly-ventilated apartments, and have taken but little exercise or healthful recreation:
you must change your habits in all these particulars; you must give less time to bu-
siness and sedentary occupations, and more time to exercise and recreation in the
open air. If your circumstances do not permit you to ride, or hunt, or shoot, or
course, you can at least afford some time for quick walking: if the middle of the day
is engaged, you can rise early and walk before breakfast; or, if that time also is devoted
to business, you can take an hour's walk at night, just before bedtime; a practice

quite free from danger to those who have not delicate lungs, and which has the advantage of warming the skin, and particularly the feet, before going to bed, and of composing and refreshing the mind after the fatigues and business of the day. . . If you are too timid to go out at night in bad weather, you can practise dancing, or fencing, or sparring, or some other gymnastic exercise at home; or you can play with young people or children at some of their cheerful games; or you can read for an hour in a loud voice, an exercise celebrated even among the Romans for the cure of bilious diseases, but most unaccountably neglected in modern times, although it has not only the effect of strengthening the stomach and assisting the action of the bowels, but also of bracing the chest and lungs, and improving the organs of voice and articulation, while at the same time it affords you an opportunity of directly cultivating the mind itself." (p. 42.)

The patient objects that his business is such as to leave little leisure for either exercise or amusement: the physician combats the objection, on the principle that "a man can always find some time for what he is fond of," and insists on the possibility, nay certainty, of his being able to take advantage of "some one or more of the exercises and recreations enumerated." "If, however," he adds, "you are unfortunately so circumstanced that you cannot or will not put into practice any of the measures which I have mentioned, there is yet another method to which you may have recourse, and from which I can promise you very considerable benefit; a method, too, which is perfectly in your own power, and which does not involve any sacrifice of time or any expense." (p. 44.) This method is the due graduation of the ingesta to the powers of the stomach and the wants of the system : in other words, proper attention to diet.

"As you find it impracticable to take those measures which are necessary to render your stomach equal to the work which it has to do, give it less work; do with it as you do with a weak horse: when you cannot strengthen the horse so as to render him equal to the work, you diminish the work so as to render it equal to the strength of the horse: do the same with your stomach. . . . You cannot take the stomach of another person as a measure for your own. . . . One man will be filled, even to repletion, by a quantity of food scarcely sufficient to satisfy the cravings of another man's hunger. There is no rule so good, or so general in its application, as the feeling of the stomach itself: if, after a meal, you are light and cheerful, and without flatulence or acidity, you have not eaten too much; if, on the contrary, you are oppressed or flatulent, you have erred either in the quantity or the quality of the food taken. . . . You inform me that circumstances render it difficult for you to use the means necessary to strengthen the stomach : the conclusion is obvious, you must diminish the quantity of the food. By so doing you will relieve yourself from the bilious symptoms; you will be no longer troubled with flatulence, acidity, and oppression after meals; your tongue will become clean, your spirits light, and your stomach, being no longer required to do more than it is able to do, will gradually improve in tone and temper." (pp. 45, 46.)

It is, however, only the combination of these two, by the simultaneous employment of proper exercise and proper diet, that the rational and certain cure of the disease is to be effected. Either will fail singly; but the effect of both will be triumphant.

"But this method [that is, taking only as much food as the stomach can digest], although calculated to cure your bilious symptoms, is still an imperfect method; because your sedentary, anxious, careful life (the original cause of the disorder in your stomach) will still exert its injurious influence, weakening and emaciating your muscles, shattering your nerves, and unfitting your stomach for the digestion of more than the smallest quantity of the plainest food. You will be improved indeed, because your stomach will be able to digest the diminished quantity of food; but this quantity of food being

too small to impart full strength and vigour to your frame, you will still be an invalid, although no longer bilious. If you wish your cure to be complete, combine the two methods judiciously together. While your stomach continues weak, give it less work; but in the mean time do not neglect the means necessary to restore its strength. As it grows stronger, it will not only be able to do more work, but its work will be better done: it will digest its food better, and the food, digested better, will produce stronger muscle, bone, and sinew, by means of which you will be enabled to take an increased quantity of exercise without fatigue; the increased quantity of exercise will produce increased strength of stomach, and the increased strength of stomach increased strength of muscle, bone, and sinew; and so the improvement will go on in a circle: your bilious symptoms will disappear as if they were charmed away; you will lose the fastidiousness of palate and capriciousness of appetite, which a disordered stomach always generates; and you will restore to your dietary, with safety and even with advantage, various articles of food which are at present excluded from it; the bloom of health will adorn your cheeks, and vigour of body will accompany and promote vigour of mind and serenity of temper." (pp. 46, 47.)

The patient, at length thoroughly convinced by the physician's arguments, takes his leave, promising to follow out in practice the principles laid down. This he does rigidly, and on his return, *after three months,* he announces his cure to be complete. He says, " I am a new man: you have been the means, under Providence, I will not say of saving my life, but (which is much more) of enabling me to enjoy it. The existence that was almost a burthen to me has become delightful, my mind and body are both at ease, and I am able to employ their energies for the advantage of my family and the good of my fellow-creatures." (p. 49.)

All this is excellent; and we venture to say that that physician will alone treat successfully the vast class of chronic disease included under Dr. Henry's comprehensive title, who adopts and follows up the general principles of the practice recommended by him. We have been long convinced that the attempt to cure habitual biliousness or chronic indigestion by mere medicinal prescription is at least as hopeless as that of the homœopathists to cure acute diseases by their imaginary medicines; and we know of no more crying or perilous abuse in the practice of physic than the universal system of purgation followed by the routine practitioners of this country. Well may Dr. Henry call the British nation "the most purging nation in the world;" and we confess we should be proud to aid him in his laudable attempt to do away this reproach.

In admitting all this, we are by no means disposed to bestow unqualified approbation on Dr. Henry's system as here exposed: it is too narrow and exclusive; it contains some serious errors, both negative and positive, of omission and commission. He is decidedly too outrageous against the use of purgatives: his horror of them almost exceeds that of *Chanticleer* in Chaucer's Nun's Priest's Tale:

> " I say furthermore
> That I ne tell of laxatives no store,
> For they be venomous, I wot it well:
> I them defy;—I love them never a deal."

Now it is one thing to prescribe the habitual use of a remedy and to trust to it almost exclusively for the cure of a disease, and another thing to employ this remedy occasionally and under particular circumstances. So far from the use of an occasional purge being injurious in bilious dis-

orders, it is the very reverse; and its employment in this manner does not in any way establish a necessity for its frequent repetition. Again, so far from proper aperients, even a course of them, being injurious in commencing the treatment of a bilious disorder of long standing, we hold them to be, in a majority of cases, essentially necessary, and necessary even to ensure the success of the rational anti-medicinal system advocated by Dr. Henry. The regulated diet, the air, the exercise, will evince their beneficial operation much more speedily and decidedly after the intestinal canal has been freed from old accumulations, the torpid mucous membrane has been stimulated, the glandular emunctories unloaded and excited, the plethora of the portal system relieved: nay, we are convinced that, without these preliminary measures, the hygienic treatment will entirely fail in a certain class of cases. We wish it, however, to be distinctly understood that we regard this medicinal course as merely preliminary and temporary: for permanent benefit—for the cure, properly so called,—we rely entirely, with Dr. Henry, on the rigid enforcement of hygienic measures. And here we think our author has taken too confined and exclusive a view of such measures, which has arisen from his regarding the morbid condition to be remedied as simpler than it really is. In cases of bilious disorder of long standing, almost the whole frame is implicated in all its organs and functions, in its solids and its fluids; and, in contemplating this wide and multifarious disorder, it seems, at first sight, not very likely that any one measure, however comprehensive in its operation, should be able to remedy so general an evil, but that the proper treatment should include as wide a range of agencies as can be effectively and safely applied. With this view, in addition to the air, exercise, and diet of Dr. Henry, we would enforce the use of other auxiliary means calculated to improve the disordered functions, not even excluding therefrom mild alterative aperients: among these means we would lay particular stress on bathing, warm, tepid, or cold, general or local, according to the circumstances of the case; friction to the surface; rigid attention to the state of the mind; and such *medicinal* treatment as the aggravated affections of particular organs, which almost invariably ensue in protracted cases, seem to require. It would surely be absurd to trust to exercise and diet alone for the cure of an incipient gastritis, or congested liver, or overloaded colon, or turgid abdominal veins, when we had it in our power more speedily and effectually to relieve these by the employment of leeches to the præcordia or anus; by the use of mild but effective purgations or injections; by a course of warm bathing; or even by a short course of gentle mercurials. We recommend these and other similar views to the consideration of Dr. Henry, and trust that he will not overlook their importance in preparing the next edition of his Dialogue for the press.

Art. IX.

Essays on the most important Diseases of Women. By Robert
    Ferguson, m.d., Fellow of the Royal College of Physicians, London;
    Professor of Obstetric Medicine and Diseases of Women and Children,
    King's College, London; Senior Physician to the General Lying-in
    Hospital. Part I. Puerperal Fever.—*London*, 1839. 8vo. pp. 299.

We believe that the impression left on the minds of reflecting practi-
tioners, by a consideration of the various kinds of treatment reported as
successful in cases of puerperal fever, has long been that the affections
described by different writers, and reported to be successfully treated by
very opposite (sometimes by diametrically opposite) methods, could not
be strictly identical; and that, if all the cases so denominated were really
cases of puerperal fever, they differed in being accompanied or not by
inflammation in various degrees, and perhaps of various organs; whilst,
as in other fevers, different epidemics were characterized by different
types, ranging from the acutely inflammatory to the typhoid. There
appeared, also, every reason to believe that, in some of the cases re-
corded under the general head of puerperal fever, the affection was not
only not inflammatory, but not febrile; being essentially a state of
nervous commotion, combined with spasm or neuralgia, incidental to the
puerperal condition. In a notice of Mr. Moore's work, in our Second
Volume, we ventured to express our own belief that the affections which
we ourselves considered as especially entitled to the name of puerperal
fever belonged to that class of diseases the fundamental character of
which is a morbid condition of the blood, produced by the introduction
of some deleterious agent into the circulation. Some of the conclusions
to which we have alluded derived confirmation, or certainly support,
from Dr. Gooch's clear and candid statements; although the views of
some previous and some subsequent authorities have been directed to
such inflammatory complications of puerperal fever as render the appel-
lation of peritoneal fevers, adopted by Dr. Gooch, of at least very
doubtful correctness. The subject, upon the whole, was left, by previ-
ous writers, exactly in such a state as made it desirable that some practi-
tioner of learning and of great experience, and gifted with a clear
understanding and calm judgment, would altogether revise it, and pro-
duce order out of what was little better than confusion. We almost
ventured to prophesy, in another article in the volume of this Journal
already referred to, (notice of Dr. Alexander's Commentaries,) that the
great establishments of London or Dublin would furnish such an one.
Precisely such an author has presented himself in the person of the dis-
tinguished professor in King's College; and, although we shall take the
liberty of reviewing his opinions with our customary freedom, we enter
upon the task with a strong belief that, in the general tenor of his
doctrines, he will be found at once comprehensive and exact. We ob-
serve that he is deeply impressed with a sense of the intricacy in which
both the theory and practice of this disease are involved; a disease so
serious as to occasion "seven-eighths of the total mortality in child-
birth:" in support of this and other statements, the author is fortunately
able to appeal to the valuable materials furnished by cases occurring
in the General Lying-in Hospital in the last twelve years, 204 in number;

four fifths of which he either treated himself or witnessed the treatment of by others.

Dr. Ferguson commences his work with the following passages, which briefly and clearly explain the view he takes of the various forms of the disease.

" I have observed four different forms of puerperal fever, each possessing very distinct general characters, and requiring for its cure a distinct treatment. The first may be termed the ' peritoneal form,' as the intensity of the malady seems to be expended on the peritoneum, and lingers longest in it. In the second the general course of the disease is that of common fever, marked by much disorder of the abdominal viscera. Very often the symptoms are those of remittent fevers, and occasionally of intermittents. In the third form the brain and nervous system seem especially affected; while the fourth, which may be termed the ' complicated,' embraces the lesions and symptoms of the other three, with this remarkable feature in addition, a tendency to fluid deposition in any or in every tissue. The fluids effused are blood, serum, pus, and lymph. This last form has always excited the most attention; for it is the most frequent and the most fatal, and, under circumstances of crowded hospitals, and misery, and poverty, intractable to remedial measures.

" These four forms—the peritoneal, the gastro-enteric, the nervous, and the complicated,—spring, as I shall endeavour to show, from one source and cause. There is no trenchant limit which bounds them in nature; and, in every epidemic which I have witnessed, the characteristics peculiar to any one are readily assumed by another. In the peritoneal form, the peritonitis ceases, and the patient succumbs under fever and diarrhœa, or under a complication of local effusions and phlegmasiæ. In the gastro-enteric, sudden peritonitis will supervene, and carry off the patient in a few hours. Such also may occur in the third or nervous form, or it may (though it rarely does) terminate by a lengthened fever, or by deposit in the great cavities, or in the joints, the muscles, or the eyeballs. It is the last form alone which is invariable, save in intensity. It may be looked on as a summary of the others, while these may be considered as fragments of it.

" Although these various forms may and do run into each other, their tendency is to remain distinct; and it is a remarkable fact that the one or the other of these will give the character to a whole epidemic; the rest either totally disappearing or appearing only rarely. It is this which has caused so much confusion and dispute in the history of opinions on puerperal fever. Each author has assumed the form he witnessed as the only one, to the exclusion of all the rest. Hence, too, the discrepancy in the treatment of this malady. Gordon, and Armstrong, and Hey saw, for the most part, the peritoneal form. William Hunter, Lowder, and the elder Hey, observed chiefly the complicated form, where the whole constitution was sinking under numerous attacks, simultaneously made, on the most distant organs in every grade of intensity. Richter and Butter witnessed epidemics in which the gastro-enteric form predominated, and in which the disordered secretions were remedied by ipecacuanha or alkalies, followed by stimulants." (p. 1.)

Further confusion has arisen, Dr. Ferguson observes, from the various intensity in which any of these forms of the puerperal fever may exist; in consequence of which, the treatment proper in one epidemic is found to be inefficacious in the next. He carefully compares his division with the divisions described, or the peculiar forms witnessed, by Douglas, Tonellé, Ed. Martens, Clark, Vigarous, Gardien, Gooch, Dugés, Boivin, Blundell, Busch, Ritgen, Robert Lee, Stoll, Doulcet, Tricher, Gasc, Murat, Gordon, Hey, Armstrong, Alphonse le Roy, John Clarke, William Hunter, the elder Hey, and Campbell; in order to show that, where any of these observers have given more than four forms, the forms seem reducible under one of the four which he has adopted, and that each of the single and peculiar forms witnessed by the rest, as by

Gordon and Armstrong for instance, were in reality one of the four which he describes.

Of these four forms of puerperal fever a minute and careful description is given, illustrated by cases; and the distinctions are of so much importance that we shall endeavour to condense the descriptions under their respective headings.

First form of puerperal fever, characterized by abdominal pain. Of this there are two kinds; one durable and dangerous, the other transient; but the distinction between the two in the commencement of an epidemic is very difficult. In both there is intense pain between the pubes and a line drawn from the crest of one ilium to that of the other; in both the attacks are ushered in by rigor; both occur about the same period, from the first to the fifth day after parturition; nor are they distinguishable by the degree of the fever or by the state of the pulse. This statement is calculated to produce great anxiety in the practitioner's mind; and it is difficult to see how mistake and danger can be avoided until the only test, that of the remedies, has been tried; when it is found that the transitory form is relieved by agents which lull the pain, and that the severer form demands the remedies of pure inflammation. The means of immediate diagnosis rarely exist. The transient form may pass on to the severer. Neither Mr. Griffin's supposed pathognomic sign, that when there is inflammation of the peritoneum the patient cannot stretch the limbs, nor the peculiarly small and compressed pulse, to which Mr. Hingeston attaches weight, are always wanting in the transient and uninflammatory form. If the attack is sudden, and followed by intermission or marked remission; if the pain be constant, and yet the nature of the epidemic shows it to have been easily removed in other cases; its transient character may however be presumed, and, as will be shown by and by, safely acted upon. Two cases illustrating the severe and deceptious symptoms of the transitory form, and their complete relief by Dover's powder and aperients, are selected from those published by Mr. Hingeston, and observed by him in the General Lying-in Hospital. A case is also quoted as published by Mr. Griffin, in the Medical Gazette for October 15, 1836, in which alarming symptoms were combated by aperients and opium. It is highly probable, as Dr. Ferguson supposes, that these were the cases in which Doulcet, Richter, and Boer produced cures by medicines which might be deemed insignificant when compared with the apparent severity of the disease with which they had to contend. The preparation employed with such alleged advantage by Boer, as mentioned in Dr. Gooch's work, and of which the secret was not divulged, is concluded by Dr. Ferguson, from a perusal of the last edition of Boer's work, to have been the "true James's powder," and not the Kermes mineral, as Dr. Gooch suspected.

Alluding to Mr. Hingeston's opinion that this first form is nervous, in the sense in which a nervous impression precedes every inflammation, the peculiarity in this instance being its permanency in this early stage; and also to the view entertained of it by Mr. Griffin, as being a nervous pain dependent on spinal irritation; and that of M. Tonellé, that it is connected with the circulation of pus in the veins; Dr. Ferguson observes,

" I believe these opinions are not really different, except in each being only a part of the truth. M. Tonellé, I think, and shall prove hereafter, would have given the

real cause had he generalized his proposition into a vitiated state of the blood, instead of limiting such vitiation to one cause, namely, the circulation of pus. In many instances we have the genuine marks of vitiated fluids, without being able to detect a particle of pus in them. Le Gallois mixed pus with blood, while it flowed from the arm, but could not subsequently detect in the compound any of the matter: hence pus may exist in the circulation without our being able to discover it. But I shall hereafter show that other products of inflammation will vitiate the blood. I would, however, strongly impress the experiment of Le Gallois on the reader. He will hereafter find many cases exhibiting the genuine character of phlebitis, in which no lesion of the vein was discoverable, and which this experiment explains, and, as many other sources of vitiation exist, to select one is exclusive, and may be erroneous.

"Admitting, with Tonellé, that a vitiated blood is circulating in the system, the two opinions of Mr. Hingeston and Mr. Griffin are readily reconcileable; the latter tracing the peritoneal pain to an irritating cause, acting on the spine first, and thence on the peritoneum; the former merely delineating the disease as a nervous affection of the peritoneum, the commencement of true inflammation, without tracing the affection to the nervous centres themselves. In all, we must conclude that the malady is a genuine puerperal fever, the peculiarity of which consists in its being limited to its very first stage; consequently, in its being within the reach of such simple remedies as merely allay pain and subdue congestion, by promoting the secretions of the intestinal canal and the skin. My own experience, and the inferences derivable from the perusal of Doulcet, Richter, and Boer, prove it is not a matter of indifference how such a malady should be treated. I believe that a severe bleeding will give to that which was transitory a permanent character, and what might have been easily removed by appropriate remedies becomes now a formidable disease." (p. 18.)

In many instances of this first form of puerperal fever, a hot linseed-meal poultice is often alone sufficient to give relief; an opiate may then be given, with or without an aperient; but, if no relief follows by this method, it is not deemed safe to wait more than four, or at the utmost six hours, without changing the treatment. The severer affection is a genuine peritonitis, and requires the energetic treatment adapted to that affection. There are four distinct stages; a preparatory stage of shivering, heat, perspiration, and anxiety of mind; then pain, fever, a hard, frequent, and compressed pulse, "the supine posture, and restrained breathing;" then the stage of effusion, with an apparent amelioration of the symptoms; to which succeeds the stage of collapse. It is found, generally speaking, that inflammation of the peritoneum only is of rare occurrence.

Second form of puerperal fever: fever with gastro-enteric irritation. In this form there is either no peritoneal affection, or it is slight and soon lost amidst other constitutional symptoms. The disease has the character of mild typhus, with intestinal irritation; and rarely lasts less than seven or more than twenty days. It rarely or never becomes fatal without being complicated with acute inflammation of some important organ, as the peritoneum or the thoracic viscera; or some deposition in the joints or limbs, followed by colliquative diarrhœa. The uterus is found either much congested and large, or pus is formed in its veins and lymphatics, or there is superficial softening of its inner mucous surface.

"When there is extensive softening of this viscus, all the above characteristics of this form of puerperal disease are merged in the broad and very obvious signs of an overwhelming, and from the very first a fatal typhus. There is no peritoneal pain, but merely very deep-seated and obtuse sensibility to firm pressure. The mind and

body are equally prostrate and enfeebled. The skin is of a deep brown colour; the pulse small, weak, and very rapid; the abdomen soon becomes tympanitic, and the whole intestinal canal seems filled with dark fluid, which is vomited without effort in large gushes, or passed in unrestrainable diarrhœa." (p. 23.)

Third or nervous form. In this variety, the rarest of the four in its pure form, although often seen for a time to change the character of the other forms, there is painful and sudden abdominal tenderness, which quickly subsides; the pulse is rapid, there is great restlessness, mental agitation, and "shifting functional disturbance of various organs; sighings, tremors, and cramps; sudden and deathlike sinking, and as sudden reappearance of strength." Terror is a frequent accompaniment of this form; furious delirium often ushers it in; and fatal coma or sudden syncope supervene.

Fourth or complicated form of puerperal fever. "This form," says Dr. Ferguson, (to whose graphic expressions we are continually inclined to give the preference,)

"This form is characterized by an appalling complication of symptoms, arising from the simultaneous or the rapidly successive attacks on distant organs and differing tissues. It begins on the first to the third day, with shivering, which very often, though not always, is followed by abdominal pain. The debility soon amounts to complete prostration. The mind is calm, and often wonderfully unconscious of danger. There is the rapid pulse and the dusky skin of the second form, and the crimson patches on the cheeks, which contrast so peculiarly with the dull glassy eye, encircled in lead-coloured lids. Sometimes the abdominal pain lasts during the whole of the brief period of the malady; sometimes it subsides in a few hours. Shortly after the abdominal attack, other organs begin to exhibit signs of disorder." (p. 26.)

We have no doubt that the practitioner may very conveniently keep this fourfold division in view, although we can imagine that the third variety is not always distinguishable from one of the forms of the first; nor even the fourth from the second. But the forms are evidently based upon important differences in the character of the malady in different cases, and their recognition appears calculated to suggest practical considerations which are important. When this last form becomes secondarily complicated, the intestinal canal usually becomes the seat of disorder; there is diarrhœa, going on to dysentery; or nausea, going on to coffee-coloured vomiting. The function of respiration is almost always disturbed; "there is sighing, loud, incessant, and automatic, independent on mental and bodily anguish;" and sometimes the lungs become inflamed, or even gangrenous. The pleura, the heart, the pericardium, the œsophagus, may become the seat of disease; inflammation of the pleura or pericardium, and effusion; softening of the heart, gangrene of the œsophagus, have been observed; perforation of the stomach or intestines may take place; and the cellular and muscular tissue of the limbs may become affected with what at first appears to be only acute rheumatism, and effusions of pus, serum, or blood, or of all, may follow, without relief, except in the milder cases. These last results are most to be expected on the back of the forearm, and on the calves of the legs near a joint; and they occur so suddenly as to have been supposed independent on an inflammatory process. The joints are often similarly affected. Dr. Ferguson has also noticed two other states of the limbs connected with puerperal fever; one resembling erysipelas, and the other, always

in the leg, phlegmasia dolens. The connexion between erysipelas and puerperal fever is, he says, illustrated by the fact that the two maladies are generally coexistent in the hospital, and " when the mothers die of puerperal fevers, their infants perish of erysipelas:" and, with respect to phlegmasia dolens, he subscribes to the opinion of Le Gallois and Professor Busch, of Berlin, that it is only puerperal fever modified by its locality. In most cases of this last disorder the vein is thickened, but not in all; and Dr. F. adopts the opinion that pus in the lymphatics will produce the same effects as when circulating in a vein. Much of the pain, he remarks, arises, where the swelling is inconsiderable, from inflammation of the nervous trunks, "which are clustered over with minute vessels, and are redder in colour." He has not seen this appearance in the nerves running over the peritoneum, so repeatedly mentioned by Campbell.

To add to the formidable character of this complicated form of puerperal fever, it is sometimes accompanied with what may be called the gangrenous diathesis. Dr. Ferguson has known the calf of the leg become black and gangrenous in four hours; but the parts most usually affected are the vagina, vulva, and sacral region. The eye is sometimes the seat of this affection; and there is even hazard of blindness in those in whom the suffusion is only slight, but accompanied by burning pain in the ball. Purulent effusion into the eye and its total destruction are not uncommon.

"When this fourth form of puerperal fever is prevalent," says Dr. Ferguson, "and the characteristic of the epidemic, one in three dies in the London hospitals, I believe, under any treatment; and, if the complications be many, this mortality will be still increased, and the most judicious and the most humane act is to shut up these receptacles forthwith. Such is the experience of William Hunter,—of those who have witnessed its plague-like ravages in the continental hospitals,—and such is mine. Happily, however, this form of puerperal fever exists with such fatality in hospitals alone. I believe that the single chamber of the pauper is more wholesome than the spacious ward of the hospital patient; while in private practice, among the well-housed and well nourished, the milder forms are the commonest. In this form we find great variations of intensity of attack, as well as in the grouping of organs attacked. Different epidemics present singular diversities in these two particulars. In one year there are no muscular abscesses, in another no uterine softening; and yet the generic characters and the main features in both are the same. Tenon and the elder French authors give curious examples of the prevalence of certain symptoms in one year, and their omission in another. (*Baudeloque.*) As to the organs attacked, taken isolatedly, my experience proves to me, 1. That each organ may undergo every grade of disease, from simple irritation, which will not proceed further, to total destruction and softening of its tissues. 2. That when many organs are attacked at once, or consecutively, they are not wrought up to one uniform pitch of malady; that while one is simply irritated, another is gangrenous. Thus, I have seen coexistent inflammation of the peritoneum, with painless and sudden perforation of the œsophagus. What are our indications for such a disease, and what our hopes of cure?" (p. 31.)

These ample and clear descriptions convey, perhaps, a juster idea of the disease called puerperal fever, in the various shapes it assumes in different cases and different epidemics, than it was previously possible to gather from conflicting testimonies; and to prepare the reader to admit the general theory of the disease professed by Dr. Ferguson. Although we trust every student will omit no part of the instructive work before us, we shall ourselves pass over the chapter on the Morbid Ana-

tomy with little remark of our own; believing that this part of the sub-
ject, the study of which is doubtless extremely important, has been
cultivated with a diligence more than proportionate to the reflection
bestowed either on the nature or the treatment of this formidable and
changeful malady.

The morbid appearances observed in different instances are (in the
order of intensity) those of inflammation of the uterine peritoneum and
ligamenta lata, of the peritoneum, of parenchymatous organs, of the
muscular peritoneum; with the production of serum and lymph in large
quantities, of blood, of pus, and of coagulable lymph. In the intestinal
canal, inflamed patches of the mucous membrane, softening and perfora-
tion, and ulceration, are sometimes met with; and the intestines are
usually distended with air, or filled with a brownish green fluid, which
accumulates from the upper part of the œsophagus to the rectum, and is
found to be a modification of bile. The peritoneal coat of the liver is not
unfrequently found to be covered with a layer of lymph, when every
other part of the peritoneum, except the envelope of the uterus, is
sound: its substance is frequently gorged, distended, and softened.
When there is much hepatic or uterine lesion, the spleen is found quite
broken up, and of the consistence and colour of treacle. Inflammation
of the peritoneal coat and substance of the kidneys, with all its conse-
quences, also occurs. The peritoneal coat of the uterus is frequently
injected, covered with lymph, or raised by a subjacent layer of pus or
blood, or both. Its substance is soft and flabby, and its contractile
power destroyed; so that it is as large at ten days after delivery as im-
mediately after the expulsion of the placenta. Small abscesses are found
at various depths in its walls; and patches of thoroughly softened and
dissolved uterine matter, the softening always commencing on the inner
surface. There is often a thick layer of gelatinous blood on the inner
surface of the uterus, under which are patches of reticulated lymph, of a
greenish brown or modena colour. Dr. Ferguson is satisfied that this is
a false membrane, as maintained by Cruveilhier, Dugés, and Seiler,
and not the remains of the decidua. The ovaria and fallopian tubes are
softened, and deeply injected with blood, serum, lymph, or pus.

In the chest are found, in different examples, copious deposits of tur-
bid serosity and lymph, and all the marks of every stage of disorganiza-
tion of the lungs. The heart is often enlarged, softened, and friable; and
its inner membrane, as well as the great arteries, deeply stained; occa-
sionally lymph and serum are found in the pericardium, and white patches
on the outer covering of the heart.

Of the veins, the uterine veins are chiefly affected; their lining mem-
brane often pale, but covered with false membrane or pus. Their coats
are thickened, and their cavities more or less obliterated: when the
neighbouring veins are affected, the adjacent cellular membrane is hard-
ened or infiltrated, or forms a bed for purulent matter. But the uterine
veins are often perfectly healthy, when the spermatic or renal or more
distant veins are disorganized. Not only pus and lymph are found in the
veins, but gritty and grey or light coagula. The mass of blood fre-
quently retains its fluidity. In some cases some unnatural fluid is found
in the vein, without lesion of the vein: whether this is the product of
absorption or of inflammation, Dr. Ferguson maintains that puerperal

fever is the result of its entering the circulation; and he entertains the
opinion that secondary abscesses are the result of new inflammations.
Pus may generally be detected, Dr. F. says, in the ligamenta lata, but
more frequently in the lymphatics than in the veins; it is collected in
small pouches, and gives them a beaded appearance. The constitutional
results he regards as being the same.

Although delirium and cerebral disturbance may exist, lesions of the
brain are rare in puerperal fever. The limbs are subject to purulent
deposits or effusions of serum or blood. According to Dugés, the order
of frequency of such attacks, when in the joints or muscles, is, 1, hip;
2, elbow; 3, knee; 4, foot; 5, metacarpus; 6, shoulder. Dr. Ferguson,
however, has found the elbow and knee more frequently affected than
the hip. When pus is deposited in the muscles, it is rather infiltrated
than contained in a cyst; and the muscular fibre is soft and sometimes
pultaceous in circumscribed spots. If, instead of pus, serum or sero-
sanguinolent fluid is infiltrated into the limb, the appearance is exactly
that of erysipelas. The body is rapidly decomposed after death; and
Martens affirms that, contrary to the usual course, the internal organs
putrefy before the external.

Dr. Ferguson quotes the results as to the relative frequency of the
above lesions from Tonellé, founded on 222 dissections, and from Dugés,
founded on 341. The general conclusions of M. Tonellé are, that the
uterus is more frequently attacked than the peritoneum, by a slight
excess in the relative numbers; that these two lesions are mostly com-
bined; that each may in turn fail; and that, in 222 cases, pus was found
in the vessels 134 times. In M. Dugés' 341 cases, peritonitis occurred
266 times; and in these the womb was affected in 3 cases in 4. Dr.
Robert Lee's report of 45 cases is also referred to; in 32 of which the
peritoneum and its appendages were inflamed; in 24 there was uterine
phlebitis; in 10 softening of the muscular coat of the uterus; and in 4
pus in the absorbents. We shall here quote a few paragraphs from
Dr. Ferguson himself, of which the object is to excite the reader to re-
flection, and to point out the relative importance of symptoms. His
work, indeed, derives no small value from its constant practical bearing;
and no better example could be given of the possibility of combining
this object with profound and philosophical views of a disease. The day
has gone by in which theory was looked upon as no more than idle spe-
culation, unconnected with practice. There are, no doubt, scattered
over the country many men, yet surviving in this age of the diffusion of
knowledge, who plume themselves on being exclusively practical men;
but even these have always some theory of their own, very hastily
formed, and never carefully examined. They go on prosperously
enough in ordinary cases; but, if their career is watched, not a year
passes in which their practical skill is not baffled by some unexpected
combination of symptoms, requiring reflection and a knowledge beyond
their own experience; and the result is that the patients die; and the
friends and the practitioner, the bereaved and the author of the bereave-
ment, unite in the comfortable assurance that nothing more could be
done, and in the pious belief that "physicians were in vain."

  "If the reader," Dr. Ferguson observes, "have considered the ample and minute
table before him, I will at this stage ask in what consists the essence of puerperal

fever? and request he will expend some thought on the question before he turns to the chapter in which it is attempted to be discussed.

"I will now merely add a few remarks as to the value of symptoms. It will be seen from my tables that peritoneal pain must be abandoned as a pathognomic and characteristic sign of puerperal fever; since in nineteen cases no such pain was there. In the thirty-three cases detailed at length by Dr. Robert Lee, eight exhibited no peritoneal pain at all. Of the nineteen I have noted, eleven died. Hence the most mortal cases are precisely those where peritoneal pain is absent. By comparing the duration of the attack of pain with the duration of the whole disease, we shall see that peritoneal affection is often of very little value as a mark and sign of danger, or even of the probable length and course of the malady. Where the peritoneal pain is great and sustained, it marks a less dangerous attack; but on this head nothing certain can be inferred, since we cannot measure the action of the complications accompanying it.

"The number of patients who had no pain was 19.

Ditto	who had pain for	1 day, 51.
Ditto	ditto	2 days, 48.
Ditto	ditto	3 days, 22.
Ditto	ditto	4 days, 18.
Ditto	ditto	5 days, 6.
Ditto	ditto	7 days, 5.
Ditto	ditto	8 days, 4.

The others had either successive attacks and remissions, or constant tenderness of the abdomen when pressed, showing the existence of morbid action." (p. 48.)

The same tables, he further observes, show that any cerebral disturbance diminishes the chances of recovery; and that the presence of delirium is almost always followed by a fatal result. The presence of intestinal disorder is far less unfavorable, and in epidemics in which it is the most urgent symptom the mortality is very slight. Of 49 cases (out of 204) in which the chest was affected, 30 died; and of 44 in whom there was some deposit in the external parts, 21 died. In 46 cases out of 80 in which the state of the lochia was accurately noted, the discharge was either offensive, scanty, or suppressed in 46. Out of 100 cases observed by Dr. Lee, the lochia were suppressed in 44, and offensive or scanty in 7: these results concurring with those of Dr. Ferguson to show that one half of the cases are complicated with obvious lochial disorder.

The chapter on the Nature of Puerperal Fever is introduced by the consideration of the origin in one source, or in many specific causes, of the manifold affections which have been described, and of the circumstances which regulate their march; for, it is observed, an ophthalmia, an ulcerated joint, an acute peritonitis, may coexist with gangrene in various parts of the body, and be accompanied with fevers of varying character; or these evils may follow in rapid succession. Dr. Ferguson then expresses his own views of the source and nature of puerperal fever in the following propositions:

"1. The phenomena of puerperal fever originate in a vitiation of the fluids.

"2. The causes which are capable of vitiating the fluids are particularly rife after childbirth.

"3. The various forms of puerperal fever depend on this one cause, and may readily be deduced from it." (p. 53.)

In support of the first of these propositions, Dr. Ferguson adduces several experiments performed by Gaspard and Cruveilhier, in which pus, recent and putrid, was introduced into the circulation, in dogs, with results analogous to those which are the product of puerperal fever, in the form

called ataxic by Tonellé, and which constitutes Dr. Ferguson's nervous form of the disorder; the peculiar symptoms being produced in such cases, according to the opinion both of M. Tonellé and of Dr. Robert Lee, by the circulation of pus in the veins.   From these experiments it is concluded that the vitiation of the fluids will produce fever, with local irritation or inflammation of different organs at the same time.   Other experiments, in which the vitiating fluids were introduced in the neighbourhood of the abdomen, and allowed to be absorbed, or directly injected into the veins, are also quoted from Gaspard and from Cruveilhier, to show that peritoneal pain and effusion, suppuration of the eyes, abscesses and disorganization of the muscles, may also be produced by vitiating the blood ; and also experiments proving that direct injury to the coats of the veins, causing inflammation and a secretion of fluid or fluids, which become mixed with the circulation, acts in the same manner. (p. 65.)   Cases are then alluded to, related by Gordon, Campbell, Kirkland, Baudeloque, and Delamotte, in which retained and putrid placentæ, or coagula, produced a genuine puerperal fever, not distinguishable from the disease above described.   Further confirmation of his views may be derived, Dr. Ferguson remarks, from a consideration of the effects of wounds from dissection, the viper-bite, and the effects of some acknowledged diseases of the fluids.   The variations in these several instances depend more, he maintains, on the point at which the circulation has begun to be injured than on any other cause.   " In puerperal fever the injury is, almost invariably, in the uterus or its appendages: hence the frequent circumscribed peritonitis, metro-peritonitis, and ovarian disorganization." (p. 72.)

Dr. Ferguson proceeds to show, in support of his second proposition, that both mechanical injury of the vessels and their contact with noxious matter, the effects of both of which causes have been already shown to be productive of fever and local consequences resembling those occurring in puerperal fever, are conditions which are combined in the uterus after childbirth.   The state of the uterus then, he observes, represents an exact analogy to the surface of an amputated stump, the secondary evils of which he had previously mentioned as so closely resembling those of the puerperal condition; an analogy strongly dwelt upon by Cruveilhier, who however, Dr. Ferguson admits, has somewhat overcharged it; not apparently taking into account the previous preparation for the separation of the fœtus from the mother.   In several dissections of the rabbit, Dr. F. has always found the portion of the uterus from which the placenta had been detached perfectly denuded, and the muscular fibres distinctly exposed; the rest of the mucous lining being entire.   In the human uterus he found the placental spot equally denuded, but the rest of the mucous membrane hypertrophied, and presenting the appearance of a fine network; which, he conceives, if not shed or cast off, must undergo great changes before it reassumes the appearance of the mucous lining of the uterus in its unimpregnated state.   In two instances, where the patients died of puerperal fever, there were only slight vestiges of the membrane, and the inner surface of the uterus was denuded and covered with pendulous flocculi.

Dr. Ferguson's third proposition is but a necessary sequence of the first and second; and it must be conceded to him, whether the cause he

assigns be assented to or not, that there is no other assigned cause of which the presence is presumably so constant, whilst some, as peritoneal inflammation and uterine phlebitis, are in many cases absent. There is no difficulty in conceiving the cause assigned by him, a vitiation of the fluids, to act with various intensity, and on various organs, in different cases. The following exposition is highly interesting:

" There are two great systems of venous capillaries: the one of the lung, the ultimate receptacle of all the blood of the body; and the other, in the liver, through which the great mass of blood, which is gathered on the mucous membranes of the intestines, is transmitted. In both of these the blood is subjected to the most important and vital changes; and to effect this, it is largely accumulated in these spots. If the blood were vitiated we should expect, *a priori*, that the liver and intestinal canal, and the lung, would exhibit the most frequent points of disease; and such we have found to be the case in puerperal fever, and in the experiments of Cruveilhier and Gaspard. But how, it will be asked, are we to account for this partitioning off of so diffuse a malady, as that induced by vitiation of the blood? why is it not always spread wherever there is blood? and why are puerperal fevers, now peritonitic alone, now metro-peritonitic, now gastro-enteric, and now falling on the nervous centres? We know that the blood-vessels, like every other part of the body, are in their nature capable, of themselves, of repairing injury, and stemming the actions of disease. The experiments of Gaspard and Cruveilhier, permit us to infer that there is always an endeavour to hem in the noxious cause as near to the spot first injured as possible; and Mr. Arnott has remarked, what Cruveilhier had stated in 1820, that coagula form, to prevent the spread of inflammation of a venous trunk; while the former gentleman, more minute in his investigation, has always found that the injured vessel is obliterated only up to the first branch it gives off: as if nature, while endeavouring to pen up the exciting cause of malady in as small a compass as possible, wished to use whatever she could of the other channels of circulation. It is from this law, that we find the injuries of puerperal fever so often confined to the uterus and its appendages, to the lower portion of the peritoneum, and to the adjoining intestinal canal, for we have seen that the point of departure for the noxious matter, is in this disease from the veins of the uterus." (p. 82.)

To trace the paths by which distant organs are affected may, as Dr. Ferguson observes, be difficult, because it cannot be ascertained what uterine veins first become affected, or along which branches the infecting matter passes into the circulation, or what is the quantity or the quality of the fluid absorbed; in which respect our knowledge is not greater than that which we possess of other poisons that affect the circulation.

From the action of the poison being more or less confined to the peritoneum, Dr. F. deduces his first, or peritoneal form of the disease; the second or gastro-enteritic, he ascribes to its action on the liver; the third to its impression being principally received by the nervous centres, which impression is not necessarily inflammatory, but rather that condition metaphorically spoken of by John Hunter as "alarm," and which sometimes leads to inflammation. The fourth or complicated form comprehends those cases in which the action of the poison is not confined to certain structures, but diffused by the circulation over many organs.

We must content ourselves with a brief allusion to the admirable chapter on the opinions of authors on the nature of puerperal fever. Dr. Ferguson gives honour due to Dr. Gooch for distinguishing, amidst the conflicting opinions of the time, that there were at least two broadly distinguished forms of the disease; one inflammatory, the other typhoid; but he justly observes, that the distinction is not absolute in every case;

the two characters being often variously combined, and the combination demanding a mixed treatment.   To Dr. Robert Lee's division,—resting on the assumption that the sole modifier of disease is the organ affected; and according to which, where the peritoneum is inflamed in the puerperal state, the fever is of an inflammatory character; and where the uterine muscular tissue is inflamed, the fever is congestive; and where there is venous inflammation, the fever is typhoid,—it is objected, that there are at least four causes which modify any malady: the producing cause; its quantity or virulence; the organ on which it acts; and the state of the constitution.   With reference to M. Tonellé's theory, we find Dr. Ferguson, as we should expect from his enlarged views of disease, repudiating the notion of the puerperal fever being dependent on local inflammation, and rejecting the same phlogistic doctrine as regards ordinary fevers.   There are but two systems, he observes, capable of conveying the morbific influence over the frame, the nervous and the vascular; and a rational theory of fevers can only be expected from an investigation of the conjoint action of the two.   This view has long been entertained, we imagine, by the majority of pathologists in this country; although defective powers of generalization, combined with an inordinate devotion to morbid anatomy, have so long given currency to more limited theories in the continental schools.   Dr. Ferguson has stated the case on both sides with great precision; and does full justice to the unquestionable merits of Broussais, whilst he points out the too great exclusiveness of his doctrine.   To this, as indeed to all other parts of his work, we would recommend the careful attention of the student to be directed; not more on account of the general correctness of the author's opinions on the disease which is its object than for the comprehensive and exact principles which are so clearly and eloquently laid down.   It is by this combination of the minute study of separate diseases, and a reference of them to the general laws of pathology, that the separate parts of medical knowledge are best improved, and the whole fabric of medicine strengthened.   The study of one disease, under a guide like Dr. Ferguson, is an introduction to an acquaintance with many; and to this reading the application of Lord Bacon's observation is truly apt, that it " maketh a full man."

The theory of Ritgen and the greater number of the German writers on this disease, that it is the result of the disturbance of those processes by which the organs, tissues, and fluids, altered by pregnancy, are brought back to their usual state, appears to be imperfect, because if for no other reason, it only comprehends a predisposing cause.   At least these recuperative processes must be common in every case, although the disturbance of them may not.   Intestinal irritation, with which Dr. M. Hall connects puerperal fever as effect and cause, is not present, Dr. F. remarks, in many genuine cases; and when present is secondary to the " metroperitonitic" attack; whilst fever, with intestinal irritation, does not produce the lesions found in puerperal fevers.   We do not fully see the force of the last clause of these objections, as, of course, Dr. M. Hall's explanation referred exclusively to the puerperal period.   Dr. Ferguson admits, that intestinal irritation occasionally becomes, like cold, protracted labour, or mechanical uterine injury, an exciting cause; adding, " so invariably, for example, does a dose of the house medicine (or senna and salts), after

causing violent pain and purging, bring on metro-peritonitis, that I have long forborne the use of this drastic irritant, as the routine dose, given on the third day after parturition." (p. 101.) In other circumstances, a dose of senna and salts would scarcely deserve to be stigmatized as a drastic irritant. There must be a peculiar sensibility in the intestinal canal at the time, connected with, though by no means causing, the general disease: but this is only what we should expect.

Among the unexplained circumstances connected with epidemic disorders, it is to be mentioned that there are years in which no puerperal fever appears; and others, as shown by Dr. Ferguson, in which, when fatal here, it is prevalent and fatal in most parts of Europe. Some tables are given which show that the coldest and dampest months are those in which puerperal fever is the most fatal. In twelve years, included in the tabular view, not one death from puerperal fever occurs in the month of July.

The prejudicial effects of the air of hospitals has already been spoken of. A lying-in hospital, Dr. Ferguson says, " should consist either of a series of cottages, or its spacious wards should contain very few patients." If we wished to enforce a greater attention to the subject of public *hygiène* and medical police, we could not do it better than by pointing to the ingeniously objectionable site of the General Lying-in Hospital, as described by Dr. Ferguson; " rather below the level of the river, and surrounded by a mesh-work of open sewers, fifteen hundred feet in extent, receiving the filth of Lambeth."

After noticing the influence of some of the above circumstances on the production of puerperal fever, Dr. Ferguson leads the reader back to the subject of uterine injury, reminding us that he has already stated that there are two sources of the morbid secretion which enters the blood and vitiates it; one the secretion from the uterine wound; the other, injury to any one or more of the uterine sinuses. It is observed, in corroboration, that a considerable number of cases of puerperal fever occur after first labours; that one half of the fatal cases are of this kind ; and that the cases of puerperal fever, after instrumental labours, are numerous. The influence of dead children, long contained in utero, is also cited. Hemorrhage and abortions are mentioned as exciting causes; and it is observed that large hemorrhages favour absorption. Unmarried women, and those otherwise depressed in mind or body, as by insufficient food, &c., are predisposed to the disease. The suppression of the lochia, in a great number of the cases, is again spoken of; but the circumstance of the non-occurrence of puerperal fever in many cases, in which the lochia are very offensive, is not, we think, alluded to: it would seem to constitute something like an objection to Dr. Ferguson's theory, unless the degree and quantity are supposed to be the deciding circumstances as to the febrile and metro-peritonitic supervention. We should also have been glad to see more notice taken of the actual or supposed conditions, of a local or general kind, which promote or permit, in the case of the puerperal woman, the occurence of so formidable a disease; while no such results follow the existence, in other cases, of topical affections of an analogous kind, or at least presenting, apparently, equally copious sources of humoral vitiation.

Dr. Ferguson concludes this enquiry into the opinions of others, by

acknowledging the services of several previous investigators; Dr. Robert Lee, Velpeau, Dance, Cruveilhier, and before him, Legallois, and previous to them all, Boyer. It is but right to allow Dr. F. to speak for himself:

" I have availed myself," he says, "of the valuable hints and developments contained in these various sources of information, and have endeavoured to prove the views, to compare the facts with each other and with my own, and having arrived at general principles, to see whether these were in their turn capable of serving as an interpretation of the facts of puerperal fever. What I have done, I do not consider as new, but look on as an attempt to demonstrate what has been hitherto a matter of pure conjecture and mere opinion; and so to arrive at that great desideratum, a just theory of this most fatal and most complex malady. I have, in conclusion, to protest against this my attempt being considered as a revival of the follies and errors of humoral pathologists with their four fluid constituents of blood, phlegm, bile, and atrabile; and their cosmic elements, fire, water, earth, and air, their occult causes, and their facile explanations. It has taken nearly three thousand years to convince physiologists that the whole of a living body is alive, and consequently subject to all the impressions and reactions of the vital power. At first the fluids were the sole seat of life, and then the solids became exclusively gifted; and each hypothesis furnished the root of a branching nosological tree. Latterly, the best modern observers have traced much of disease and morbid formation to disorder in the fluids. The danger is not from a rational humoral pathology, but from a retrogression to the old irrational one: not from the cautious limitations of Andral and Cruveilhier, but from the very able but somewhat exclusive doctrines of Stevens. Another objection may be further urged against my views as to all the varieties of local lesion being consecutive of a vitiated circulation. As peritonitis, enteritis, or metritis, may occur in the unimpregnated woman primarily, why are we to believe that in the impregnated alone they are mere secondary derivatives? To this I would answer, that I by no means deny that any tissue or organ may be primarily attacked in both states of the female system. That there may be a peritonitis, which is not the result of a puerperal fever, as there may be a pneumonia or congested brain, not the effect of a typhus. But I am quite certain, these purely local inflammations with symptomatic fevers, are very rare after childbirth, and that no one can fail to see a vast difference in the formidable accompaniments of the local inflammation after childbirth, and those which occur before it." (p. 110.)

A large portion of Dr. Ferguson's volume is devoted to the *treatment* of puerperal fever; and this is copiously illustrated by cases which we shall not attempt to condense. Those who wish to become prepared for the serious responsibilities of puerperal practice will do well to peruse this portion of the book with scrupulous attention. Whoever reflects upon the nature of those responsibilities, the difficulty of diagnosis, the obscurity of indication, and the importance of a prompt and correct decision, will not easily think that enough has been done, even with very careful study, to be secured from mistake, and protected from the painful conviction of having fallen into fatal error. In many diseases, error may be retrieved, and life saved; but in this formidable malady, a wrong opinion, an improper system of practice, will be too speedily followed by bad consequences to be repaired. If death holds his dart aloft, shakes it, and delays to strike, it is merely to afford the practitioner one chance of success; and if that is missed, no future care, no anxious intercession, can avert his weapon more. In almost every epidemic of this nature, it appears that one in every three who are attacked dies; a mortality equal to that of the malignant cholera: and, as Dr. Ferguson expresses it, " to save two out of three may be termed good

practice in an epidemic season." (p. 112.)   Indeed, although Dr.
Armstrong had to contend with a disease in which he was enabled to
cure forty out of forty-four; Dr. W. Hunter *lost* thirty out of thirty-one
cases in another epidemic; and in the Paris hospitals, in 1746, *not one*
recovered.

Treatment of the peritoneal form.   The first application which
Dr. Ferguson mentions is that of a large linseed-meal poultice, applied
over the whole abdomen, made sufficiently thick to retain warmth for
four hours: it soothes the pain; it induces copious perspiration; it
induces sleep.   If general bleeding does not seem required, and, on the
other hand, the symptoms are not typhoid, ten grains of Dover's powder
may be given as soon as the poultice is applied.   Probably as much
advantage would be found to ensue from a bran-poultice (bran in a
flannel bag dipped in hot water), and the application is more convenient
and cleanly.   In four hours, if the symptoms are alleviated, a fresh
poultice may be applied, and the Dover's powder repeated: but if
within four hours of this second dose, the symptoms are not improving,
depletion must be at once resorted to.   The efficacy of this plan depends
on its early application: and, in cases in which the necessity of vene-
section is not obvious, the delay of it for six hours, Dr. Ferguson says,
is not injurious, nor the use of the opiate hurtful.   On this point, al-
though not without trembling, we must defer to Dr. Ferguson's expe-
rience.   In such an assurance, from one so experienced and thoughtful,
there is certainly no little consolation.   The inconvenience of diminish-
ing the secretions by the opiate may be obviated by combining it with
a mercurial aperient.   One fifth of Dr. Ferguson's cases were treated in
this way, without bleeding or leeching, and of these only two died.
This section is illustrated by twenty-two cases, which, with the remarks
interspersed, we necessarily, but with reluctance, pass over.   We trust,
however, that there is not a study or a surgery in which they will not be
read.   They are arranged with the intention of showing that the intensity
of the malady is chiefly expended on the peritoneum; that there is every
variety of degree of this intensity; and that some are best relieved by
acting " on the nervous element of inflammation," while others also
require depletion, to every variety of extent.   On this vital point of
practice, we must again quote Dr. Ferguson's own words:

"The following is the sum of my own experience of bleeding as a remedy in
puerperal fever: of all the means we possess of arresting this malady, I believe
bleeding, general or topical, to be by far the most extensively applicable. The cases
in which it is not so are exceptions to the rule.   Mercury, turpentine, emetics,
opiates, sudorifics, &c., have a more limited range of utility than abstraction of blood.
But while I admit this, I am equally certain, that *large* bleeding has not been borne
in this malady, generally speaking, during the last twelve years.   Those who have
borne it best and required it most were—1. Those who were originally vigorous, and
in whom no chronic ailment of the intestinal canal or lungs previously existed.
2. Those in whom the fever was accompanied by a general turgor of the frame: their
aspect being that of a person who has been flushed by running, and forming a marked
contrast with the pinched, shrivelled, and stricken looks of those labouring under the
typhoid form of the malady.   3. Those in whom the disease seemed to be limited to
one organ.   It may be asserted, with more hesitation, however, that they who are con-
fined out of an hospital, exhibit greater reactive powers than those who are confined
in one.   The pulse, as Gordon has remarked, is very deceptive; and the cases I have
given show that painfulness is no sufficient criterion of the necessity of depletion.

Besides these general indications, puerperal fever has invariably the character common to the ordinary fevers raging with it: if the latter require depletions, the presumption is, that the former will also. It is curious that, in the majority of cases bled, the blood is neither cupped nor buffed. The persons who do not bear large bleedings are those attacked by the ataxic or gastro-enteric forms; even though they be of originally strong constitutions: also those labouring under the complicated form, where many organs are, simultaneously, under the grasp of the diffusive malady. But in this last class there are so many shades of disease, that no absolute rule can be laid down. If large bleeding be determined on, it must, to be beneficial, be resorted to within the first twenty-four hours of the attack. In the second stage of the disease it is often rapidly fatal. If the bleeding be made early, it may be often repeated. It appears, where it does not remove the malady, to stop its progress, and make it continue lingering in its first stage, so that the repetition of venesection is late, only as to the lapse of time, but not tardy, as to the progress of the disease. Of local depletion by leeching, it may be said that the cases, in all the four forms of puerperal fever, are very few indeed, which do not permit us to resort to it. It often removes a pain which will not yield to bloodletting. The number of leeches required will, of course, vary with the case; in some, six is sufficient, in others, six dozen will scarcely be so. But the average cases will require from two to three dozen." (p. 152.)

The application of leeches to the uterus itself, by means of a tube, or by simply introducing them into the vagina, is strongly recommended " in the less overwhelming forms" of the malady; from six to twenty may be safely and beneficially used.

Treatment of the gastro-enteric form. Active purgatives, which have been recommended by some authors in this form of the disease, are considered by Dr. Ferguson as decidedly mischievous, and our own experience leaves no doubt of this in our mind. If the bowels require to be freed from scybala, the aperient used should be, not the senna and salts of which the bad results have been already mentioned, but castor oil, with the addition of the tincture of hyoscyamus or hop, in a full dose, to prevent griping. General bleeding is seldom required in this form; topical bleedings may be serviceable; but even these often produce fainting. It must not be forgotten, Dr. F. says, that in this form of the disease the nervous system is much wrought on, and that there is another cause of debility in the intestinal flux. The treatment advised is the moderate application of leeches, so as to reduce the disease to a simple fever with gastro-enteric irritation. If the skin is early dusky, and there is nausea or vomiting, an emetic is to be first given. If there is no nausea or vomiting, but intestinal flux, with a red tongue smeared with saburra, a large dose of calomel (from ten to fifteen grains) is recommended; of which the effect will be several large pultaceous stools; and the tongue will become clean, less red, and moister, and the pulse less frequent. Sometimes a repetition of this dose is only required for the cure; but in other cases, diarrhœa recommences and soon becomes colliquative; in which state Dover's powder, with a mercurial, is serviceable if the secretions are diseased as well as copious; or, if not, absorbents and astringents are required. If there is great debility, wine must be freely given, in gruel or sago; but if it is not so great, the strength may be supported by soups, *thickened* with any gelatinous substance. If delirium, or nightmare, or fantastic visions torment the patient at night, a full dose of Battley's sedative, in camphor mixture, with a few additional grains of camphor, may be given. When the diarrhœa abates, tonics

may be given, and " these are always better borne when ammonia is a chief ingredient." (p. 160.)

Treatment of the ataxic forms. From amidst the profound observations by which this section, comprehending cases connected with the most hidden operations of the nervous system, is introduced to the reader, we cannot resist transcribing, in reference to the peculiar state of weakness of that system with which the ataxic form of puerperal fever is associated, the following most happy and eloquent reference to one of the greatest physiologists who ever adorned this or any other country.

" This state of the nervous system was, as far as I know, first noticed and made a prominent principle for guidance in practice, by John Hunter, and received from him the remarkable designation of ' action without power;' one of those apparent paradoxes, which never could have arisen but in the mind of one who had been long accustomed to commune with the deeper intellect displayed in nature, and who, seeking in vain among the symbols of human thought for an adequate expression, was forced to create a language for ideas to which he alone could attain. There is such a remarkable striving throughout the whole of his essay on the blood, to make this thought intelligible and available, that it is impossible not to feel the importance he attaches to it. Several cases are scattered through the work, intended to unveil the mystery, and to show how largely this peculiar form of debility, which imitates all the acts of genuine inflammation, and yet has none of its power, enters into the domain of disease. The expressions which Bichat, and others, have coined, as excitability, irritation, are but feeble and marrowless, and require the volumes they have written to illustrate their obscurity; while the pithy sentence of Hunter is at once a discovery of the essence of the malady, and a guide to the practice." (p. 177.)

The practice in this form of the disease is, the reader will readily conclude, " to sustain." Stimuli, largely and frequently given, are necessary, where there is sinking; and, where there is no visible sinking, sedatives, but especially Battley's laudanum, must be immediately given. Nourishing food and tonics become subsequently appropriate. Dr. Ferguson introduces the striking case from Gooch, in which that eminently sagacious practitioner was sent for to see the wife of a physician, who had suddenly become apparently affected with phrenitis; a hot and turgid head, a quick pulse, and raving. The husband proposed a large bleeding and rapid salivation. Dr. Gooch begged permission to try the efficacy of " a dose of Battley"; forty drops procured tranquil sleep, from which the patient awoke debilitated, but quite rational and continued so.

There are cases, even of the ataxic form, in which, the head being much flushed and there being pain which the sedative has not removed, it is necessary to apply leeches; but even this must be done watchfully and cautiously. This section of the treatment, and the preceding one, are also, like the first, illustrated by cases briefly related, and which will well repay the patient reader.

Treatment of the complicated form. Of this, the slighter cases are alone curable. Fortunately, although it generally accompanies each epidemic, it rarely forms the general epidemic character. Quoting Cruveilhier's discouraging attempt to answer a question which must, in some period or other of every medical man's life, have presented itself to his mind under distressing circumstances,—" what treatment shall we oppose to purulent infection?"—Dr. Ferguson attempts, with great modesty and candour, to ascertain, amidst the difficulties, some landmarks to guide the practitioner in respect to the various means so often

indiscriminately and uselessly resorted to; mercury and quinine, for example; emetics and stimuli; turpentine and sudorifics; vesicatories and strong diuretics.   He reminds us, that the purulent infection is attended with various states of the constitution in different epidemics, and in different persons; requiring in some, in consequence of great reaction, depletion; whilst others will sink at once: and that between these extremes every variety may be expected, dependent on the organs attacked, and the degree in which they suffer.   So that the indications, he observes, are to attend to the local lesions, but not to forget that these are but the effects of a more diffusive cause.

These principles are illustrated by particular remarks on emetics, purgatives, mercurials, turpentine, and Stephens' mixture.   In the year 1782, Doulcet, physician to the Hôtel Dieu, obtained the greatest success from emetics (ipecacuanha); he was largely compensated; but in the following year this mode of treatment proved quite unsuccessful.   The practical question is, Dr. Ferguson observes, what are the cases in which this remedy is applicable?   M. Doulcet was led to his practice from the observation of spontaneous vomiting in a patient at the very commencement of the attack, and this, Dr. F. thinks, furnishes an answer to the question.   When the violence of the malady has fallen on the liver, and there is early nausea and spontaneous vomiting, emetics may be useful. For some cases treated in this manner we must refer the reader to his book.   The remarks on purgatives, and on the cases requiring them, and their adaptation to the character of the case to be treated, are highly judicious.   The section on the employment of mercurials contains some valuable observations on their antiphlegmonous properties, from lectures delivered by Dr. Farre in 1826, which we shall not attempt to abridge.   Of turpentine, Dr. Ferguson has no experience in puerperal fever: he believes it might be useful in the second stage of the disease, when the intestines are tympanitic; and he has given forty drops in syrup, or emulsion, made of yolk of egg, every four hours.   The only benefit he has observed is that it strengthens the pulse.   It is beneficial as a rubefacient, and Dr. F. appears to think that vesicating agents are most useful in this malady when their operation is limited in this point. He has tried, without benefit or injury, the use of the celebrated briny mixture of Dr. Stephens.

The following observations are on points of practice too important to be omitted:

"In the complicated form of puerperal fever, the ' deposits' which take place in the limbs and eye, require much attention in the treatment. If there be constitutional vigour, or if the part be affected early in the malady, leeches may be applied.   They are contra-indicated when these disorganizing processes appear in frames enfeebled by disease or constitutional causes.   Two or three examples are recorded in my tables, where a few leeches applied, late in the disease, caused immediate sinking. The local inflammation is, even in the very last moments of life, exceedingly painful, and seems to demand depletion; but, unless the whole state of the patient be taken into the account, a dozen of leeches will turn the vibrating scale from life to death. It is when the eye is attacked that leeching will be oftenest useful.   When the seat of deposit is in the cellular and muscular portions of the limb, it should be covered either with a linseed-meal poultice, or with flannels soaked in decoction of poppy and chamomile flowers.   The ease obtained is very great; the swelling subsides in many instances entirely, leaving the limb unscathed ; in others it is removed in every

part but two or three spots which are found to be puffed out with pus, which should be evacuated. Where deposition takes place in a joint, the treatment of leeching and poulticing, will sometimes arrest its disorganization: in all it will give ease. But there is a tardy convalescence to be looked for, and, even with the best surgical attention, it is often impossible to prevent the loss of motion of the affected limb." (p. 226.)

But we must here close our notice of this valuable practical work, leaving many observations of much interest without comment, for with such almost every page abounds. In the Appendix are inserted an account of Mr. Gulliver's Researches on Suppuration; a letter from Dr. Copland on the Treatment of Puerperal Fever in Queen Charlotte's Lying-in Hospital; and one from Dr. Watson, professor of medicine in King's College, on the Use of Opium in certain Inflammatory Diseases; besides other articles bearing on important points in relation to the general subject of the work.

Appended to the essay on Puerperal Fever is a lecture by Dr. Ferguson, delivered by him on opening the medical session in King's College in October, 1836. The thanks of the profession are, we think, due to Dr. Latham and Dr. Watson, by whose advice Dr. Ferguson was induced to print this masterly discourse; which, whilst it touches on many points of philosophical import and general interest, bears strongly and throughout on the improvement of medicine.—Our opinion of the merit of Dr. Ferguson's Essay has been several times incidentally expressed when noticing different parts of it. He is one of those writers whose works not only tend to improve the science of medicine and to render it more useful as a practical art, but whose writings add to the stores of its most valuable literature. His style is clear and forcible, unaffected and elegant. The minutest points of practice are spoken of with precision and distinctness; his narrations are perspicuous; and whenever he touches on the higher branches of physiological enquiry, he does so in the manner of one who does not approach such topics rashly, but has often and deeply reflected on the limited time and faculties with which man attempts to pick up a few pebbles of knowledge by the great sea of truth that lies before him. There are to whom these things are of small account. We are not of the number; but rather say, in the words of an ancient master, if not of medicine, of philosophy : " Non quærit æger medicum eloquentem sed sanantem : si tamen ita competit, ut idem ille qui sanare potest, compte de iis quæ facienda sunt, disserat, boni consulet." (*Senec. Epist.* 76.)

ART. X.

ObservationesAnatomicæ et Microscopicæ de Systematis Nervosi Structura. Auctore ROBERTO REMAK, Med. et Chir. Dr.

Anatomical and Microscopical Observations on the Structure of the Nervous System. By ROBERT REMAK, M.D. *With two copper-plates.* —Berlin, 1838. 4to. pp. 41.

THIS memoir not having come to hand when the article on the structure of the brain and nerves in our Twelfth Number was printed, we now give an abstract of it by way of supplement.

The memoir is a thesis which the author wrote on taking his medical degree at the University of Berlin. It is divided into two sections, treating, respectively, of the peripheral parts of the nervous system, and of the central parts. The plates are very expressive and well executed, from the author's own drawings.

1. *Primitive Tubules and Fibres of the Cerebro-spinal Nerves.* As mentioned in the article in our former Number, Remak thinks he has determined, " that the contents of the primitive tubules, both of the nerves and of the central parts, is by no means an oily mass, or one composed of globules, or an altogether amorphous mass, but a *fibre* which is solid, plane, extremely pellucid, having straight parallel margins, an even but somewhat rough surface, and a remarkably strong texture, so that it is less easily torn than its sheath."

2. *Organic Fibres of the Sympathetic Nerve and of the Cerebro-spinal Nerves.* In our former article, p. 412, we said, that it is a question whether the sympathetic really contain any fibres *sui generis.* Retzius and Müller observed, in certain nerves, gray filaments from the sympathetic, which did not immediately intermix with the white fibres, but preserved their colour and situation for a considerable length. Valentin, as we saw, attributes the colour not to gray filaments but to the pressure of the nucleated globules, which he and Purkinje discovered in the gray substance of the brain and spinal marrow, and in the ganglions. According to Remak's observations, however, " the peculiar colour and constitution of the sympathetic nerve and its branches are not produced by an intermixture of nucleated globules, but by the peculiar structure of primitive fibres originating from the ganglions :" these primitive fibres (as they are not tubular, that is, not enveloped in any sheath, but are naked,) are extremely pellucid as if gelatinous, much more slender than the generality of primitive tubules, and almost always presenting longitudinal lines on the surface. They readily resolve themselves into very delicate threads; they frequently present oval nodules in their course, and are more or less abundantly covered by small corpuscles, which are oval or round, seldom irregular, simply or compoundly nucleated, and, as to size, almost equalling the *nuclei of the nucleated globules.* These fibres, Remak calls *organic fibres.* They must not be confounded with the *primitive tubules* of the brain and nerves, nor with the *primitive fibres* which these tubules, according to Remak, contain. Remak says, these organic fibres are easily observed in all the cerebro-spinal nerves, and at every part of their course, by means of the microscope. He has found them, though in small quantity, both in the anterior and posterior roots of the spinal nerves.

Gray fibres of the sympathetic, or organic fibres, then, are found in the cerebro-spinal nerves. Remak has found, on the other hand, " white nervous threads from the roots of the spinal nerves joining the sympathetic, and running separately among its gray parts for very long distances." " It often happens," he continues, " that in the gray cords of animals recently killed, white threads may be followed as far as the ganglions, where the primitive tubules, after they have formed plexuses, mingle in greater or smaller quantity with the various branches proceeding from the ganglions."

It thus happens that the cords arising from the ganglions of the

sympathetic vary much in colour and constitution. Many are merely gray, almost gelatinous, opaque, and composed for the most part of *organic fibres;* though they almost always present, on one or other side, very slender white threads, discernible by the naked eye or by the assistance of a simple lens, composed of *primitive tubules.* Other cords again, especially in the thoracic and abdominal part of the sympathetic, incline to a *white colour,* and contain a greater quantity of *primitive tubules* than the merely gray cords.

3. *Ganglions of the Sympathetic and Spinal Nerves.* In regard to Valentin's account of the structure of the ganglions, Remak remarks: " but the point, without doubt, of the greatest importance for the understanding of the nature of the ganglions, Valentin did not nor could know; *for the organic fibres arise from the very substance of the nucleated globules."* Remak is of opinion that, as the organic fibres, which constitute the greater part of the sympathetic nerves, take their origin from those nucleated globules, by the aggregation of which the ganglions are especially formed—the sympathetic ganglions must he considered as *true centres of the organic nervous system.* He is further of opinion that, as the differences between the sympathetic and the spinal ganglions consists only in the quantity of fibres thence arising, and in the number of nuclei, *the spinal ganglions themselves appear to belong to the organic nervous system.*

4. *Spinal marrow.* a. Anatomical observations. Rolando makes mention of a peculiar substance, which he calls *gelatinous* in the posterior part of the spinal marrow. Remak has made some further observations on this subject. According to him, it covers not only the posterior margins of the posterior cornua of the gray substance of the spinal marrow, but a very delicate lamina of it is also continued at the internal margins of these cornua, in such a way, that between the posterior white commissure (that is, the continuation of the white cortex of the spinal marrow from the one side to the other, at the bottom of the posterior fissure), and the commissure between the two lateral portions of the central gray substance, there is a commissure of the gelatinous substance under consideration. Hence, Remak counts four commissures, by which the lateral parts of the spinal marrow are joined, viz., a posterior white commissure; a gelatinous commissure; a gray or spongy commissure; and an anterior white commissure.

On each side of the apex of the calamus scriptorius there are grayish tubercles, the *tubercula cinerea* of Rolando. These, Remak has found to be a true continuation of the gelatinous substance of the spinal marrow, of which they exhibit the same characters as regards colour, consistence, and internal structure. The gelatinous tubercles are joined by a commissure, the continuation of the gelatinous commissure of the spinal marrow; and behind this, Remak has also found a continuation of the posterior white commissure, joining the posterior pyramids in such a way that, together with the gelatinous commissure at that place, there is formed a sort of transverse frenulum over the entrance of the short canal described by Rosenthal at the apex of the calamus scriptorius.

According to Burdach, the filament which forms the inferior extremity of the spinal marrow contains gray substance. Remak's most recent

observations go to show that the matter which is contained in the fila-
ment, or rather in that slender canal, is *gelatinous substance.*

    b. Microscopical observations. In the gray or spongy substance of
the spinal marrow, Valentin observed nucleated globules, but here also
he overlooked the most important point; for from the nucleated globules
of the gray substance, which generally exceed in size those of the gan-
glions and of the cerebrum, microscopical fasciculi also arise, equalling
in breadth nearly the primitive tubules. These microscopical fasciculi
consist of several non-tubular but generally rough fibres, often disposed,
as it were, tortuously. They are sometimes not unlike those which
arise from the globules of the ganglions, if the nodules and nucleated
corpuscles which occur in the organic fibres be kept out of view;
sometimes again they resemble the primitive fibres (of the tubules), from
which, however, they differ by their greater roughness and greater ten-
dency to ramification.

    In the gelatinous substance of the spinal marrow, Remak found cor-
puscles for the most part oval, but sometimes round, always a little
flattened and pellucid; sometimes, especially in the ox, of a bright
yellowish red colour, and containing near the surface a small nucleus.
As concerns structure and magnitude, they resemble more or less the
nuclei of the nucleated globules. They are remarkably like the greater
part of the nucleated corpuscles found contained in the organic fibres;
often also, especially when they are coloured, like the corpuscles of the
blood of the triton. The corpuscles, under consideration, although very
often observed lying free, yet appear to be joined intimately with that
texture which, in addition to these, composes the gelatinous substance.
On account of the remarkable softness and tenuity of this texture,
Remak has succeeded in recognizing the disposition of the fibres of
which it consists, only in some places of the gelatinous substance to be
mentioned below. But the very delicate primitive tubules which are
observed in the gelatinous substance are those decussated in a manifold
way; they appear, however, to pass through it only, not in any way to
terminate in it.

    The inferior extremity of the spinal marrow, as it is composed entirely
of gelatinous substance, contains in general all the parts just described;
but on account of several differences which it presents, it requires a
particular description. The nucleated corpuscles, which increase in
quantity so much towards the lower end, that the lowest part of the
terminal filament appears to consist of nothing but corpuscles of this
kind, begin in the cylindrical part to differ from those of the rest of the
gelatinous substance, inasmuch as they contain much more frequently
two or three or more small nuclei, and as there are intermixed among
them very many corpuscles of almost the same form and size, but as yet
more pellucid, quite plane, and wanting nucleoli. But as to the structure
of the fibres, which, in addition to the nucleated corpuscles, compose
the gelatinous substance, Remak could only observe this much, that at
the very extremity of the central filament in the sheep, they formed a
very delicate network, abundantly covered by these different corpuscles.

    Lastly, the lateral branches of the terminating filament of the spinal
marrow, which have a very great external resemblance to the sympathetic
nerves, are so constructed internally, that, with the exception of the
greater tenuity and delicacy of the parts, it has not happened to Remak

to observe any more important difference from the organic nerves. They consist, for the greater part, of very slender naked fibres, in the course of which are frequently found nucleated corpuscles, varying as to form and structure, in the same way as in the organic nerves and lower end of the spinal marrow, and of more delicate primitive tubules which generally appear to correspond, as to external constitution, in a remarkable manner with the tubules of the organic nerves.

Remak has not been able to make out anything certain regarding the relation between the roots of the spinal nerves and the different substances composing the spinal marrow. He says, " one thing I am persuaded of is, that the fibres of the roots of the nerves have not such a simple origin as that of passing immediately into the longitudinal fibres of the spinal marrow." He adds, in a note, that he has seen fibres from the posterior roots perforating horizontally the white substance in the interstice between the anterior and posterior roots, and running to the external part of the posterior cornua of the gray substance. The connexion between the roots of the spinal nerves and the gray substance of the spinal marrow, observed first by Bellingeri, and mentioned again by Weber, (Hildebrandt's Anatomie, Bd. iii. p. 374,) has been more recently insisted on by Mr. Grainger.*

5. *Brain and Cerebellum.* In the article in our Twelfth Number, p. 413, we spoke of certain caudate nucleated globules, observed by Purkinje in the yellow substance of the cerebellum, by Valentin in the yellow substance of the brain, and by Müller in the medulla oblongata of cyclostomatous fishes. According to Remak's observations, all the varieties of globules described by these investigators depend merely on this, that from each nucleated globule of the cerebellum, both in the yellow and in the gray substance, as also in the spinal marrow, in the cerebrum and in the ganglions, one or more microscopical funiculi, composed of more delicate fibres arise, differing in no important particular from those observed in the spinal marrow.

Remak never could observe the terminating loops of the primitive tubules situated between the white and gray substances of the brain and cerebellum, as described by Valentin, in such a way as to be able to conclude that these loops should be considered the true terminations of the tubules in the encephalon. It seemed to him rather that the primitive tubules run tortuously, much in the same way as in the exterior parts of the ganglions and in the spongy substance of the spinal marrow, bending and rebending several times, as they gradually approach the surface of the cerebrum. Whence it is, that frequently there are observed arches of tubules, the crura of which are directed toward the very surface of the brain.

Remak has not determined anything in regard to the peripheral terminations of the nerves; he seems satisfied of the correctness of Schwann's observations regarding the microscopical networks of the cutaneous nerves.

In dissecting brains, of the larger mammalia especially, there is easily observed a purely gray, almost gelatinous, stratum, seldom exceeding half

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* See the notice of Mr. Grainger's Essay on the Structure and Functions of the Spinal Cord, in our Volume V. p. 486.

a line in thickness, except in one place to be described below. This
stratum is more or less separated by a white interstice of almost the same
thickness, from the cortical substance, but in regard to its course it is
almost everywhere parallel with the gray substance. This matter noticed
only, and that but slightly, by Gennari and Soemmering, is composed,
according to Remak's observations, for the greater part, like the gelatinous
substance of the spinal marrow, of nucleated corpuscles and very slen-
der non-tubular fibres. This gelatinous substance of the brain descends
into the pes Hippocampi, and there swelling, forms a sort of ganglion
several lines in thickness. The intumescence constitutes, as it were, the
nucleus of the pes Hippocampi, and is separated by a thin white layer from
the cortical substance of that gyrus, from the evolution of which the pes
Hippocampi is in part produced.

Remak concludes the descriptive part of his very interesting paper
by the following curious observation. He has found that the *acervulus*,
which is met with in the pineal gland and in the plexuses of the pia mater,
consists of globules equalling or exceeding the largest nucleated globules.
If the globules of the acervulus be subjected to the action of muriatic
acid, carbonic acid is evolved, and there are left pellucid globules, con-
taining a reddish nucleus, and a nucleolus like the nucleated globules of
the ganglions.

Art. XI.

Lectures on Lithotomy, delivered at the New York Hospital, December,
1837. By ALEXANDER H. STEVENS, M.D, Surgeon of the New York
Hospital, and Emeritus Professor of Clinical Surgery.—*New York,*
1838. 8vo. pp. 93. 4 Plates.

THE small publication which bears the above title is divided into two
sections or lectures. The first includes the anatomy of the parts con-
cerned in the operation of lithotomy, together with a comparison between
the bilateral section, as recommended by Dupuytren, and the unilateral
section, as commonly practised in this country.

As we consider that Dr. Stevens has been far from successful in his
endeavours to elucidate the anatomy of the different structures which are
situated between the cutaneous surface of the perineum and the neck of
the bladder, and still less fortunate in his attempts to illustrate them by
plates, which indeed are lithographic monstrosities in their way, we shall
not follow him through this part of the subject. Neither do we feel our-
selves called upon to lay before our readers his remarks respecting the
relative advantages of the unilateral and bilateral sections through the pe-
rineum and prostate gland, as they will be found almost verbatim in the
posthumous work of Dupuytren, on the same subject. Dr. Stevens fol-
lows the same train of argument as this great surgeon, to whose views
and opinions he professes himself a decided convert.

In the Second Volume of the British and Foreign Medical Review,
(p. 99), we gave a full analysis of Dupuytren's work on the " Nouvelle
Méthode," or " bilateral section ;" and, as we conceive, succeeded in show-
ing how inefficient it was to overcome or do away with those difficulties

which it was intended to obviate. We then presented to our readers, as the most conclusive evidence on the subject, as the best commentary on the work in question, the tables of mortality published in France and in England: these proved, in the first place, that the number of patients who sunk after the operation for stone was much greater in France than in this country; and, again, that the success of the distinguished operator himself, under his new method, was far below the general average success of his countrymen; in fact, that more patients have died after the operation of the bilateral section than at any other period or under any new mode of removing the stone from the bladder.

Our present remarks will be confined to a few observations on a new instrument, or bisector, which Dr. Stevens has invented, and which, indeed, forms the *argument* of the pamphlet now before us.

Dr. Stevens describes his new lithotome as follows:

" I venture to offer to the profession a new instrument for the bilateral section of the prostate. In form it resembles a large olive, with a beak at the extremity, with cutting edges at the sides parallel to its longest axis, and with a straight handle. The grooved staff employed in connexion with this instrument is as wide as the urethra will admit, and the groove gradually terminates as it approaches the end of the staff.'' (p. 53.)

The urethra is opened by a crescentic incision carried across the perineum, with its concavity facing towards the anus, and terminating on either side between the anus and the tuberosity of the ischium. The lithotome is then introduced into the groove of the staff and pushed on into the bladder, dividing the prostate on each side of the urethra.

It will be seen that the method recommended by Dr. Stevens is essentially the bilateral operation of Dupuytren, with a single modification; viz. that, in the one case, the division of the prostate is effected by the entrance of the lithotome into the bladder; in the other, by the withdrawal of the bistouri cachée from the viscus. We consider the alteration made by Dr. S. as a decided improvement, inasmuch as the greater simplicity in the form of the instrument is calculated to facilitate its use, and to diminish the risk which, more especially in inexperienced hands, must always attend the employment of a complicated apparatus. Beyond this, the operation does not differ in the slightest degree from that practised by M. Dupuytren, and is obnoxious to precisely the same objections which we brought forward and explained at considerable length in the article referred to; and which, we conceive, were fully proved by the extraordinary number of fatal cases which followed the use of the double bistouri cachée. In justice to Dr. Stevens, we shall quote his own words as regards the advantages of his plan, and at the same time offer a few observations in reference to the accuracy of his deductions.

" The advantages in the use of this instrument are, 1. That the circular form of a transverse section, gives an opening through the gland of three diameters instead of two, as when a flat instrument is employed: thus it is not necessary to carry the incision so far laterally to obtain an opening of given dimensions; and hence there is less likelihood of hemorrhage from injuring the plexus of vessels that surrounds the prostate." (p. 53.)

As we are by no means certain that we understand Dr. S.'s meaning as to the gain of these diameters in his section through the prostate, we

shall refrain from making any observations on the foregoing paragraph which is certainly somewhat obscure.

" 2. The prostate is cut horizontally, and though not absolutely, yet for all practical purposes in its greatest diameter." (p. 54.)

We will not cavil at the ambiguity of the language or the equivocation contained in the sentence just quoted. If we rightly understand the distinction attempted to be drawn between the terms " absolutely" and " for all practical purposes," it is intended to imply that a section through each side of the prostate on a level with the urethra (for such must be the line of the knife) produces an opening into the bladder which is best adapted for the extraction of a calculus under circumstances which render the lateral operation difficult and dangerous. We do not mean to deny that a tolerably efficient opening may be secured by the instrument in question, but as the urethra, instead of passing through the centre of the prostate, approaches much nearer to its anterior or pubic aspect, where it is often but thinly covered by the substance of the gland; it is quite impossible that the incision adopted by Dr. Stevens can divide the organ, either absolutely or practically, in its greatest diameter.

" 3. The rectum is pushed back by the convexity of the posterior part of the instrument." (p. 54.)

As the rectum cannot, by any possibility, sustain injury during the introduction of the lithotome into the bladder, the advantage just cited dwindles down into comparative insignificance. Indeed, if the safety of the intestine is liable to be compromised during any period of the operation for stone, it is during the first incisions through the perineum, by which the urethra is exposed : no risk is sustained in the subsequent section through the prostate, in whatever way the section may be performed. Upon the whole, the rectum is more likely to be wounded by a transverse semilunar incision through the perineum than by the oblique incision of the lateral operation.

" 4. As the prostate is stretched transversely across the instrument, the section is made by a clean cut, and with so little resistance that the instrument does not, like ordinary gorgets, require to be thrust in with force, but may be passed lightly along until the section is completed. Thus there is less danger of wounding the fundus of the bladder by a sudden cessation of resistance from the parts divided; they are, in fact, divided without force."

" 5. The easy division of the prostate obviates the dangers of tearing the cellular tissue which connects the anterior surface of the bladder to the posterior wall of the ossa pubis." (p. 54.)

We willingly concede to Dr. Stevens the value of these advantages, when contrasted with the violence necessary for the introduction of the gorget ; but his instrument presents, in this respect, no superiority over the knife. The scalpel employed by Mr. Hey, and many other eminent operators, in conjunction with the straight staff, both of which Dr. Stevens so strangely, we had almost said ignorantly, designates as " awkward instruments," is introduced into the bladder with greater facility and less resistance than any other instrument ever devised for the extraction of calculus.

In the subsequent part of his lecture, Dr. Stevens proceeds to speak of the mode in which the stone is to be extracted from the bladder, and

the difficulties which are likely to be incurred in its removal, especially if it exceeds the average size.

The causes of resistance to the passage of a stone are thus enumerated by the author, and his own arguments only serve to strengthen our conviction that the lateral operation as performed by the knife is capable, when circumstances require it, of making a larger and at the same time safer opening for the extraction of a large calculus, than can be accomplished by the double-edged lithotome.

" Among the causes opposing the withdrawal of the stone, the muscular fibres at the neck of the bladder, especially when in a state of spasm, are first to be considered. This cause may be overcome without laceration, by steady gentle traction. The second cause of resistance is the fibrous capsule of the prostate gland. This capsule will yield to a limited extent only: beyond which, if force be applied, it will be torn. The third is the substance of the prostate gland itself: this is more disposed to be lacerated than to be stretched. The fourth obstacle is presented by the transversalis muscle, if its fibres have not been completely divided. In a few words, I consider the resistance to arise from the capsule of the prostate, and the neck of the bladder; from the transversalis muscle when not divided on either side; from the levator ani and its investing fasciæ." (pp. 77-79.)

Now all these causes of difficulty present just so many objections to the bilateral operation for the extraction of large stones, simply because the nature of the instrument and the part of the prostate through which it cuts, are such as to limit the size of the opening to a certain extent, beyond which it cannot be carried. In the bilateral operation the transversus perinei muscle is probably not divided at all. The deep fascia is merely cut across and not separated from its attachment to the ramus of the ischium and pubes: the section through the prostate not only takes place in the narrowest place of the gland, but is necessarily limited to its substance, and cannot be carried beyond the organ without compromising the safety of the surrounding venous plexus, or, what is infinitely more dangerous, laying open the subperitoneal cellular texture, and exposing it to urinary infiltration. The unilateral section, on the other hand, tends to remove the track of the knife from the seat of all this mischief. The preliminary steps to open the urethra ensure the division of the transversus perinei, together with the layers of fascia investing the perineal and levator ani muscles, while the section into the bladder, made either at the introduction or the withdrawal of the knife, is carried through the widest part of the prostate, and, if extended beyond that organ, emerges from its substance, not into the subperitoneal tissue, but below that part of the gland where the adhesion of the pelvic fascia forms a barrier between the peritoneum and the lower outlet of the pelvis. If we consider the cavity of the pelvis to be circumscribed or shut in below by the fascia, which, after lining the surface of the levator ani, becomes adherent to the sides of the prostate and neck of the bladder, in that way suspending the viscus, the cavity is never entered at all by the unilateral operation. The bladder is entered below it, and the barrier of aponeurosis, which separates the knife of the surgeon from the subserous tissues, would not be compromised, even though the incision were extended by the side of the rectum until it reached the sacro-sciatic ligament. The opening into the bladder would communicate with the external wound in the perineum, and with nothing

else.   It is not the least of the advantages afforded by the lateral opera-
tion that the deep perineal fascia is separated from its attachment to the
pubis and ischium, not merely cut across; and that the more depending
situation of the external wound, as the patient lies on his back, affords
a readier exit for the escape of the urine than can be obtained by any
other kind of incision.

Dr. Stevens asks, " do the bones of the pelvis ever offer any resistance
to the extraction of the stone?" and answers his own question by
saying, " in the bilateral operation probably not; but in the lateralized
operation, if the incision is not carried as near the rectum, and continued
as low down as it may be with safety, some resistance must be caused
by them." (p. 79.)   We hold precisely a contrary opinion ; and conceive
that the bones are more likely to afford resistance in the bilateral than
in any other method of operation, because the incision is made trans-
versely across the narrowest part of the arch of the pubis, in which it
can by any possibility be performed.   The matter admits of a simple
demonstration.   The bladder must be entered and the stone subsequently
withdrawn through a triangular space, the sides of which are formed by
the rami of the pubis and ischium ; the base by a line drawn between the
tuberosities of the latter bone, while the apex is represented by the
symphysis pubis.   The urethra passes through this triangle at a short
distance below the apex, consequently in the narrower part of the arch.
In the bilateral section the urethra is dilated transversely on each side,
the lithotome cutting directly across the arch, the incision extending
from the canal towards the ramus of each pubis.   It follows, therefore,
that the opening for the extraction of the stone cannot exceed the width
of that part of the arch which is on a level with the urethra.   On the
other hand, in the lateral operation, the incision commences from the
horizontal level of the bilateral section, and is continued downwards into
a space which increases in width, in proportion as the incision may be
extended in length.   Surely Dr. Stevens must have bewildered himself
amongst the twenty different layers and sets of structures which he
enumerates as intervening between the perineum and bladder, when he
ventured upon an assertion so palpably untenable as that which we have
just quoted.

Dr. Stevens does not seem to object greatly to the use of force in the
extraction of a calculus.   He says,

" It is certain that very successful operators are in the practice of using at times a
great deal of force, enough to draw the patient from the table if not held there; and
reasoning, no less than experience, justifies this practice within certain limits.   The
alternative is, to a great degree, between a wound contused even to disorganization,
and an extensive deep slough from urinary infiltration.   The former is the minor
evil.   If the opening of the blades of the forceps indicate a stone of more than two
inches in its smallest diameter, he will not be able to remove it by a force equal to
the lifting of forty pounds, which I conceive is the utmost which is justifiable." (p. 75.)

We certainly have witnessed a very unjustifiable degree of violence
exercised in the extraction of stone, but we by no means agree with the
author, that the best and most successful surgeons are in the habit of
resorting to such a practice.   On the contrary, it is held up as most re-
prehensible.   Perhaps no greater objection can be offered to the use of
the bilateral lithotome than the fact, that it places the surgeon on the

horns of a dilemma when embarrassed with a calculus of more than ordinary size. It leaves him to the choice of two evils, either to extend his incision beyond the prostate in such a direction as will probably endanger the life of his patient by urinary infiltration, or to use such a degree of force as will contuse the parts even to disorganization, if it does not produce mischief more certainly fatal, by tearing the prostate away from its cellular connexions. Dr. Stevens suggests that, when the stone is too large to be removed with safety, it should be crushed in the bladder by instruments adapted for the purpose, and extracted piecemeal.

Having thus expressed our free opinion respecting the operation recommended by Dr. Stevens, it is but right to add, that he has used his prostatic bisector in two cases; in one of which he succeeded in extracting from a boy eleven years old a very large stone, composed of phosphate of lime, and weighing three ounces. In form, it was a flattened ovoid, measuring six inches and a quarter in its longest and four and a half in its shortest circumference. It was finally extracted with the assistance of a curved lever and the fingers of the operator, after dividing the transversus perinei muscle of the right side, which prevented its exit. Erysipelatous inflammation subsequently took place around the wound, but yielded to remedies, and the boy completely recovered. In the second case the stone was about as big as a pigeon's egg, and was extracted with the finger and curved lever, without any particular difficulty. The child was only six years old, and suffered much after the operation from fever and constitutional irritation, but ultimately got quite well.

We cannot conclude this article without making a remark on the lithographic plate, No. 3, which accompanies the book, and which is intended to illustrate the section of the prostate gland in Dr. Stevens's operation. We should be unwilling to impute a want of candour and a wish to deceive the superficial observer; but the pencil of the artist has evidently been biassed by the opinions of the surgeon. We consider that this plate by no means exhibits a fair and accurate view of the parts connected with the operation of lithotomy. The position of the prostate, the situation of the urethra, and the whole arrangement of the sketch are inaccurate, inasmuch as they are warped in favour of the views of the operator. The dotted lines, which mark the cutting track of the lithotome through the prostate, are irreconcileable with the shape of the instrument, as depicted in a previous plate; as the two horizontal blades there indicated cannot by any possibility produce an incision which shall pass downwards and outwards from each side of the urethra.

We feel convinced that Dr. Stevens has not formed an accurate conception of the manner in which the lateral operation is commonly performed in this country, nor of the facilities which are offered by the use of the knife in making a large incision into the bladder. We gather from the publication before us, that his ideas and opinions on the lateral section refer more to the method in which it has been practised in France by means of the lithotome cachée. The bisector invented by Dr. Stevens is certainly an improvement on the double lithotome of Dupuytren, and it also possesses the recommendation of being a safe instrument; but it ought not to supersede the use of the knife, which is all-powerful and efficacious when placed in the hands of a skilful surgeon.

Art. XII.

Ueber die Pulsation in der Oberbauchgegend als begleitendes Symptom der Indigestion. Von Dr. C. Hohnbaum.—*Hildburghausen*, 1836.
On Pulsation in the Epigastrium as an accompanying Symptom of Indigestion. By Dr. Charles Hohnbaum.—*Hildburghausen*, 1836. 8vo. pp. 98.

Dr. Hohnbaum's experience has convinced him that epigastric pulsation is of much more frequent occurrence than is usually imagined, and that it is always complicated with derangement of the digestive organs.   With this there is usually connected the well-known morbid condition commonly denominated *abdominal plethora;* but whether as cause or effect our author seems undecided.   In such a state of things, the existing derangement of the venous circulation within the abdomen is apt soon to be reflected on the arterial system, in proof of which he refers to the irregular determinations of blood to the head, chest, &c., which frequently ensue, the hands and feet all the while continuing unnaturally cold. The face will now be frequently suffused, the pulse quick, full, and irregular, especially after taking food, the sleep restless and disturbed by dreams; headach and dizziness are often complained of, the temper is altered, and there is a disinclination to all exertion.   It is at this period that the epigastric pulsation, depending apparently on impeded abdominal circulation, ordinarily makes its appearance, being occasionally, though by no means constantly, connected with a perceptible swelling in the epigastrium.

The author himself, who seems to be of an eminently nervous temperament, and very hypochondriacal withal, was for thirteen years the subject of this affection, and a great portion of his pamphlet is occupied in detailing his own case.   Purgatives, venesection, and low diet he found useless.   Leeches afforded some temporary relief.   To the aperient waters of Carlsbad he ascribes much benefit, a large proportion of which may, we think, fairly be set to the account of change of air and scene, together with freedom from the fatigue and anxieties of his usual professional avocations.   His health, which was from boyhood up delicate, had been still further impaired by the seductive but injudicious practice of prosecuting his studies up to a late hour in the night, a season at which, though the ideas may flow with greater freeness, there is in nervous individuals such a natural tendency to febrile excitement as is obviously indicative of the necessity of repose.   In every case of the disorder which has fallen under his notice, the subject of it, whatever may have been his rank in life, was of sedentary habits.   He points out at considerable length the diagnosis between pulsations of the kind which it is his object to investigate and those depending on aneurism of the aorta; or on tumours or enlarged abdominal organs pressing upon this vessel.   The pulsations which we are now considering are often more conspicuous, though less permanent, than those of aneurism; they commonly supervene at stated periods, and more especially some time after eating.   He believes that temporary distention of the bowels with feculent matter or flatus may, by pressing on the great vessels, occasionally give rise to this phenomenon.   We have

ourselves known well-marked abdominal pulsation to cease instantly on the shifting of wind from one part of the intestines to another: and a somewhat similar observation in regard to the transmission of the heart's action was made by Laennec in his own person. Kreysig speaks of having often met with these abdominal pulsations in hypochondriacal and hysterical patients, in fevers, before critical and other hemorrhages, in cases of suppressed hemorrhoids and in amenorrhœa. Baillie alludes to their sudden cessation on the supervention of gout.

As to the proximate cause of this affection little is known with certainty. Albers, who has written so elaborately on abdominal pulsations, conceives it to depend on a morbid condition of the abdominal nerves, and Senac, Burns, and Hope take a similar view of it. Dr. Law supposes that both it and the bruit de soufflet, which so frequently accompanies it, may depend on a temporary narrowing of the aorta produced by some irregular action of the nerves of the cœliac plexus which here surround it. Kreysig attributes it to an exalted state of vitality in a limited portion of the aorta; and Laennec, who had convinced himself that the action of the arterial system was in some degree independent of that of the heart, held a similar opinion, ascribing the pulsation to a locally increased energy of contraction in the artery.

The prognosis according to Dr. H. is generally favorable. " In respect to the treatment, as the proximate cause of the affection appears to consist in a partial obstruction of the abdominal circulation, and consequent accumulation of blood in the larger vessels, more especially the aorta, the chief indication consists in the removal of such obstruction." We should be taking a very narrow view of the treatment, continues our author, were we to confine our attention to the single symptom of epigastric pulsation, and make no account of the other evidences of derangement of the digestive organs, and of plethora of the veins within the abdomen, or finally of the marked excitement in the arterial system. Proofs of the last two may indeed occasionally be absent, but never those of disorder of the stomach or bowels; as, for example, flatulence, a sense of oppression and weight in the epigastrium, acidity, pyrosis; or else constipation or diarrhœa; or finally, a sense of anxiety, impeded respiration, hypochondriacism, melancholy, and distate to existence. When the epigastric pulsation makes its appearance in consequence of suppression of the menses or of any other accustomed evacuation, local or general bloodletting is indispensable; so also when there exists obvious excitement of the arterial system, or symptoms of congestion in the head or chest. By itself alone, however, epigastric pulsation rarely requires this remedy, and in the few cases where it may appear to be indicated leeches will generally be found to be more effectual than venesection. Warm footbaths are to be employed when the feet are habitually cold. Digitalis is decidedly injurious, as it tends still further to derange the digestive organs. The aperient neutral salts taken in small quantities very largely diluted, in imitation of natural mineral waters, have been found very useful. All measures likely to restore the functions of the stomach are to be put in requisition, and all flatulent and acidifying foods, spirituous and other exciting liquids, (such as tea and coffee,) religiously abstained from as long as there exists a marked excess of vascular action. At a later period of the disorder, however, a little mild wine has not appeared

injurious.   Gentle exercise and travelling are particularly recommended, together with the avoidance of everything which exhausts the strength and spirits, or ruffles the temper.

It will thus be seen that Dr. Hohnbaum's views of this affection coincide in many points with those more recently advocated by Mr. Faussett. (See No. IX. of this Journal.)   But whilst they both agree as to the co-existence of derangement of the digestive organs, Mr. F. ventures a step beyond our more cautious German, and places the essence of the disorder in epigastric congestion or chronic inflammation, implicating the *ganglionic nerves and plexuses* and thence reflected on the aorta.   He believes that there is in every case a considerable fulness, occasionally amounting to tumour, in the epigastric region, together with pain on pressure.   In opposition to Dr. Hohnbaum as well as to Dr. Baillie, he thinks the affection is more common in women than in men.   He takes a more serious view of the prognosis and employs the antiphlogistic treatment, (including the use of mercury and counter-irritation,) with greater activity and perseverance.

Art. XIII.

The Village Pastor's Surgical and Medical Guide : in Letters from an old Physician to a young Clergyman, his Son. By Fenwick Skrimshire, m.d.—*London,* 1838.   8vo. pp. 445.

In a former Number, (No. X. p. 381,) when reviewing several of the then recently published popular works connected with medical science, we expressed ourselves convinced that the public were benefited by works of this class, and that we therefore regarded their announcement with satisfaction.   The publications that then came under our notice, however, referred either to the principles of physiology or else to the mere prevention of disease; and any approbation of works of the same general class must be much more jealously granted to such as are devoted to popular instruction in the art of curing diseases.   The tendency of the former kind of books is to enlarge the mind, and induce in their readers observation on those every-day circumstances which tend to the increase or diminution of the general happiness; while the latter are placed, for the purposes of practical application, in the hands of those in whom there cannot be that balance of knowledge which may enable them correctly to appreciate many difficult conditions of the morbid state, nor that extent of information which is necessary to enable them to weigh and discriminate the relative value of opposing medical opinions.   There is no one art in which the trite adage of "a little knowledge is a dangerous thing" is so applicable as in medicine.   It has long been, and doubtless will continue long to be, the misfortune of many to study popular works on the treatment of disease, in order to understand maladies under which they themselves really labour, or fancy that they labour, and thus to learn a lesson which ever proves in its effects fraught with bitter results: in truth, all the treatises, without one exception, that have hitherto been published to this end are worse than useless, and well merit the pun-

gent remark of the author of the " Doctor," that " a book which directs people how to physic themselves ought to be entitled Every Man his own Poisoner." Nevertheless, there are situations in which the experience of every day shows us that some slight but judicious acquaintance with the simpler and more obvious principles of the practice of physic may be usefully possessed by non-medical persons whose lot may have thrown them into conspicuous and responsible situations amongst a poor population, to whom medical assistance is not only difficult of access, but is often not to be obtained at all. The recent enquiry into the state of pauper medical relief has placed in strong light the fact that a very large proportion of the poor population of this country, whose employment obliges them to reside at remote distances from the residence of the medical practitioner, does not enjoy that prompt and constant professional assistance which is absolutely required under many conditions of severe malady.

It is to supply the requisite knowledge amongst educated individuals in situations such as this, that a sufficient work has been a desideratum; and, though many have been published to this purpose, yet, generally speaking, either from attempting too much, or from meagerness upon those topics where the non-professional person may be useful, such works have proved to be anything but beneficial.

There can be no doubt that it is far from an easy task to write a satisfactory work on popular medicine. There are many qualifications necessary to the individual who may undertake it: it requires a peculiar mind to compose a work for the guidance of that portion of the public who are untaught in the principles of the art, as well as ignorant of the frame on which these are to be applied. The writer should not only possess a clear and comprehensive knowledge of the principles of his profession, together with a long experience of their practical workings, but must likewise be endowed with a certain tact and acquaintance with the minds of men of liberal education, whereby he may be enabled to appreciate their caliber in respect to matters with which they are not professionally conversant. It is also especially essential that a work to this end should be written with the most jealous care; for it must be borne in mind that neither previous education nor opportunity have given the power to acquire that knowledge and experience by which to discriminate between the resembling symptoms of different diseases: whence the necessity of plainly pointing out and laying much stress upon the when and the where the non-professional person should stay his interference. The style of such a work should be concise, plain, and comprehensive, and, of all things, free from controversy; plain directions, and judicious limits to these, should be its chief characteristics.

The work which is at the head of this notice in many respects accords with these requisites. It is addressed to the most proper class of persons, and explains well and sufficiently how far the country curate may venture to extend his powers of usefulness, by administering medical relief to his sick poor; and it clearly points out those bounds, " quos ultra citraque nequit consistere rectum:" it is not burdened by details, but places in a strong point of view the general aspect of disease, and in plain terms enables the man of liberal education to appreciate where he may apply the remedies at his command.

On these grounds, were it not for some most vital imperfections, we might recommend the work of Dr. Skrimshire, not only to the class of persons to whom the author has addressed it, but likewise to the junior students of the profession, whose opportunity of seeing disease during pupilage is often much greater than is commensurate with the knowledge attained.   We also fully believe that it only requires a few good popular works of this kind to put a stop to the far-spreading quackeries of the present day. Judicious and useful knowledge thus honestly acquired cannot fail to work results more hostile to the diffusion of such baneful and irrational absurdities as homœopathy, animal magnetism, &c., than any acts the legislature may devise, as well as to supersede the injurious nostrums so liberally dispensed by the officiousness of Lady Bountifuls.

We were pleased to meet, in Dr. S.'s work, many very useful hints, which, from being so apparently trifling, are omitted in larger or more pretending volumes: we allude to such little matters as the swelling of the finger upon the ring.

" Another common accident to a finger, which may be mentioned as appropriately here as elsewhere, is the accidental confinement of a ring with so much tightness as to prevent the withdrawal of it by any ordinary means.   This sometimes arises from some sudden swelling of the finger; at other times, from slow and gradual growth of the finger in size, when the person has neglected to remove the ring for years.   But the inconvenience arises more frequently from the person's own indiscretion in forcing on a ring that is too small, when the ineffectual attempts to withdraw it increase the evil by bringing on soreness and inflammatory swelling.   In all these cases first try the effect of cold by immersing the hand in ice-cold water : if this does not alone reduce the swelling, hold the hand up so as to encourage the return of the venous blood, and at the same time apply cold by means of wet rag.   If this also fails, make trial of the following ingenious device, which, I have lately been informed, very frequently proves successful.   Wrap a piece of packthread closely and tightly round and round the finger, beginning at its extremity until you reach the ring; then insert the end of the string, by means of a fine blunt bodkin, or other such instrument, under and through the ring, draw it tight, and then begin to untwist the string from around the finger, and you will gradually bring down the ring at the same time.   When all these means fail, the ring must be filed off, as the consequence of its retention will be ulceration and perhaps mortification." (p. 82.)

The observations upon small-pox and the relative value of vaccination (pp. 273-289) are exceedingly good : the plain, simple, and concise way in which the whole question is stated cannot fail to be of service to the good cause.

Having said thus much in favour of this little work, we are convinced that Dr. S. will take in good part our pointing out some few of the blots in its execution, which are particularly disfiguring, and which we think should induce him to hasten to revision.   Under the head of Burns and Scalds, (p. 68,) though the severer applications of continued cold and turpentine are dwelt upon, the more simple and really valuable applications of cotton and flour are omitted ; again, when speaking of Abscess, (p. 111,) though the difficulties of diagnosis are briefly mentioned, yet stress sufficient is not laid upon the impropriety of any but medical men interfering with them.

The use of strychnine (p. 196) is much too loosely alluded to, and too confidently recommended even for a professional work ; but a remedy of

a nature so frightfully powerful should have found no mention in a book devoted to popular instruction.

Some passages we met with in the course of reading this volume induce us to think that Dr. S. has not always kept pace with the learning of the day. For instance, in stating that there is no antidote to arsenic, he makes no mention of the recent trials of the tritoxide of iron, and he seems not to have read the favorable accounts that have been given of its efficacy.

Before we finish this notice, we cannot refrain from expressing our disapprobation at the covert philippic in which the author has indulged against some of the first practitioners of the day; especially against one who, as a surgeon, ranks among the very chief in England. We allude to the observations on Hysteria (p. 172). The whole paragraph is unfortunate, and we are convinced that it will be only for Dr. S. to read it in these pages to see the truth of our strictures.

"Hysteria (anglicè hysterics) is described by medical authors as a very Proteus, imitative of almost every other disease in the nosology. Very learned physicians have written histories of its imitative powers, and have attempted to describe its anomalous varieties; and celebrated surgeons have of late gone so far as to speak and write about hysteric knees and hysteric breasts. It does not require much sagacity to foretel that all this will in a few years be deemed arrant nonsense; and to have thus huddled together an immense variety of distinct disorders under the title of hysteria will be deemed, and truly so, a proof of ignorance."

The worst part of the whole book, however, are the appendixes: in fact, in their present state, we consider the book almost unfit to be circulated amongst non-professional persons: we refer to the extreme largeness of the doses of the medicines recommended: for instance, the dose of arsenic for an adult is stated to be eight drops, for a child four; calomel for an adult six grains, for a child four; laudanum for an adult forty drops, for a child eight; wine of colchicum from forty to sixty drops for an adult, &c.

It is with much regret that these very glaring errors have forced themselves upon us. We trust, however, that Dr. Skrimshire will hasten to prevent the mischief they may occasion; especially as there really is much that is useful and excellent in these letters which he has indited to his son.

Art. XIV.

Recherches Anatomiques sur l'Emphysème Pulmonaire. Par le Dr Lombard, Médecin de l'Hôpital Civil et Militaire de Genève.
Anatomical Researches on Pulmonary Emphysema. By Dr. Lombard, &c. &c.—*Geneva*, 1837. 4to. pp. 20.

The chief object of the author of this memoir is to elucidate the anatomical history of pulmonary emphysema, in order to give greater precision to the opinions of those who have previously investigated this part of the disease. Dr. Lombard begins by dividing pulmonary emphysema into three forms,—the *vesicular, lobular,* and *lobar,* excluding the interlobular; because, existing external to the "pulmonary tissue," he

does not consider it "as a lesion of the organs of respiration, and, consequently, that it ought not to be included under the same denomination." Were we disposed to recommend the separation, nosologically considered, of interlobular from pulmonary emphysema, we should certainly suggest a more scientific ground of distinction than that assigned by Dr. Lombard; viz. the very different nature and mechanism of the disease in each. The three forms of pulmonary emphysema designated above by Dr. Lombard were well known to the illustrious author who first made the profession acquainted with this disease, and as accurately if not so minutely described by him and several other succeeding pathologists. The extent of the emphysema is the chief ground of the distinction of the three forms of the disease, and of their respective appellations. In the first form, the emphysema is limited to a few isolated vesicles; in the second, it affects an entire lobule, which is the most common of the three forms; and, in the third, it occupies the whole of a lobe, one or both lungs. Besides these differences in the extent of the emphysema. Dr. Lombard points out others derived from the anatomical characters of the disease; the most of which will be found in the works of Laennec, Andral, and others, as characterizing the different stages of the disease. As, however, the opinions of Dr. Lombard on the nature of pulmonary emphysema are founded on the results of his anatomical investigations, we shall briefly state the anatomical characters given by him of each form of the disease.

The essential anatomical character of the first form is a certain degree of enlargement of a number of the air-cells, the size of which is greater in reality than in appearance, from the portion contained in the substance of the lung being larger than that seen externally. When the enlargement of the air-cells is considerable, it is always owing to a communication having been formed between several contiguous ones, from destruction of their parietes. This circumstance, the destruction of the parietes of a number of the air-cells, and a lateral communication between them, constitutes the distinctive anatomical character of the second form. It is by far the most common form of the disease, and the description given of it is clear and accurate. The lobulated character which it so frequently assumes is clearly traced; and the fact noticed of the peripheral portion of the lobules being always most affected,—that is to say, the degree of the emphysema being always greatest at the surface of the lung. We do not, however, agree with the author in the explanation which he gives of it,—viz. "the greater extensibility of the pleura than of the tissues situated in the substance of the lung." We apprehend that the greater size of the air-cells at the surface of the lung, and, *a fortiori*, the production of the large pyriform and globular appendices met with in aggravated cases of the disease, is a necessary consequence of the physical law which so powerfully contributes to the accomplishment of the function of respiration,—viz. the pressure of the atmosphere, which, during inspiration and expiration, but more especially during the former, must tend more or less to carry outwards, to distend and elongate the pleura pulmonalis and contiguous air-cells. To this influence might, perhaps, be added another, that of the confined air, the elasticity of which, probably increased, operating in the peripheral direction, in which there is the least opposing force. The third form of emphysema

presents two varieties: " In the first variety all the lobules are emphyse-
matous, but in different degrees;" its anatomical characters are the same
as those of the second form.   In the second variety, "the whole of a
lobe, or even of one lung, is transformed into a spongy-looking body,
apparently in a state of hypertrophy; but the augmentation of volume
does not depend on increase, but rather on atrophy of the areolar tissue,
which, having lost its elasticity, has become distended by the inspired
air. The size of the air-cells is variously increased, combined in some parts
with rupture of their parietes, and giving rise to the formation of anfrac-
tuosities; the blood-vessels are obliterated, or at least diminished in size
and number; the pulmonary tissue being pale, and almost exsanguine-
ous; the interlobular cellular tissue has disappeared; and hence the surface
of the lung presents a uniform aspect, without intersections throughout
the whole of a lobe."   The only fact of importance noticed in the de-
scription of the anatomical characters of this form of emphysema is the
obliteration or diminution in size and number of the blood-vessels; and
on this circumstance he founds his opinion on the origin and nature of
the disease.   " Direct observation," he observes, "leads us to recognize
in pulmonary emphysema two anatomical circumstances essential to its
existence,—1, the destruction of a considerable part of the intervesicular
parietes; 2, the obliteration of almost all the capillary vessels in the
emphysematous portion of the lung."   The reader will no doubt feel
some surprise at this conclusion of the author, as it has been already
distinctly stated that the first form of pulmonary emphysema—viz. the
vesicular—passes into the second, or lobular, when the enlarged cells in
the former communicate with one another, from rupture of their parietes.
In the first form of emphysema there is, therefore, according to our
author's own statement, simply dilatation, not rupture, of the air-cells.
Indeed, that pulmonary emphysema, whether existing in a portion of
a lobule, a whole lobe, or in both lungs, consists simply in dilatation of the
air-cells, without any other appreciable physical alteration, is a fact fully
established; and it is even in the most extensive forms of the disease that
this state of simple dilatation is most conspicuous.   It is, however, as
Dr. Lombard has justly observed, always complicated with destruction of
the intervesicular parietes when carried beyond a certain extent.   Both
states of the air-cells are, indeed, generally met with, sometimes the one,
sometimes the other morbid condition predominating; but we hold the
opinion that the former condition, or dilatation of the air-cells in pulmo-
nary emphysema, always *precedes* the destruction of their parietes—in one
word, that *dilatation* of the air-cells, from whatever cause arising, with
retention of the inspired air, constitutes the essential physical characters
or conditions of pulmonary emphysema.   To this state succeeds the
destruction of the intervesicular parietes, and, consequently, the exten-
sion of the disease under an entirely new form; the consequence, in fact,
of atrophy, as stated by our author, from obliteration of the vascular
structure of the lungs.   This explanation of the production of pulmo-
nary emphysema accords with that given by Dr. Carswell, in Fasciculus x.
of his work on the Elementary Forms of Disease, under the section
entitled "Atrophy from a diminished supply of blood."   This author
has, besides, pointed out the *cause* of the morbid condition of the capil-
lary circulation which gives rise to the atrophy,—viz. the long-continued

compression of the capillary vessels by the confined air; a mechanical cause, in fact, which is well known to occasion the same modification of nutrition in various other organs. While alluding to atrophy as a powerful and frequent cause of the *extension* of pulmonary emphysema, we think it of sufficient importance to observe, that the application of the term to that state of the lungs in old people produced by atrophy is extremely improper. Our author considers this state as similar in its nature to his second form of emphysema in young persons; and previous pathologists, more especially Andral, have committed the same error. The destruction of the intervesicular structure of the lungs from the atrophy of old age, although depending on obliteration of the capillary circulation, obviously does not, from what we have stated, constitute pulmonary emphysema. There is not necessarily *dilatation* of the air-cells, and no *retention* of the inspired air in the atrophiated vesicular structure; consequently no increase in the bulk of the lung or difficulty of breathing as the necessary concomitant. On the contrary, there is not only a greater or less diminution in the bulk of the lungs, but also a corresponding one in the capacity of the thorax; changes, the various degrees of which, and the relations which they bear to each other, have been well illustrated by the researches of MM. Hourmann and Dechambre. We trust, therefore, that pathologists, at least, will no longer apply the term emphysema to that state of the lungs in old people produced by atrophy.

It may not be irrelevant to our present purpose to advert here to a state of the lungs not unfrequently, but incorrectly, described as emphysema. In this state the lungs do not collapse when the cavity of the thorax is laid open; they even sometimes project beyond the cut edges of the ribs, and they communicate, when pressed, the same sensation as when affected with emphysema. But they are not affected with emphysema; for their vesicular structure has undergone no change of capacity, as is obvious by comparing the air-cells with those of a healthy and collapsed lung. The inflated condition of the lungs is the consequence of forced inspiration, and occurs in various diseases, but more especially in those cases of bronchitis, whether succeeding to a chronic state of the disease or not, in which the bronchial secretions are retained to such a degree as to obstruct or interrupt the egress of the air, and which, consequently, accumulating more or less rapidly, produces death by asphyxia. Obstruction to the free egress of the inspired air is certainly the most essential of the causes of emphysema; but, in the state of the lungs to which we are now alluding, the fatal effects of the obstruction are too rapid to allow of dilatation of the air-cells taking place. It is, in fact, a state of the lungs which does not differ from that which may and often does occur in strangulation, sudden closure of the glottis, or compression of the trachea: or it may be produced after death, simply by insufflation. It is, in fine, a state of *inflation*, and, from the frequency of its occurrence, from its being probably the immediate cause of death, and, to distinguish it from emphysema, ought to be noted and designated as such.

Dr. Lombard very justly, we think, discards the notion of hypertrophy of the air-cells being ever associated with emphysema; and he does so on the ground of his not having met with this change of bulk in his anatomical researches. Our objections to this notion are founded on the fact

that hypertrophy and dilatation of the air-cells, when they do occur, constitute a physiological and not a pathological change; being always subservient to a corresponding and supplementary increase of the function of respiration, the very reverse of what occurs in pulmonary emphysema.

In the explanation of the signs and symptoms of pulmonary emphysema, considered in relation to the anatomical lesions, nothing of any importance has been added by Dr. Lombard to our previous knowledge on this part of the subject; nor does he suggest anything in the treatment of the disease likely to be more successful than the means generally employed.

The coloured lithographs, explanatory of the author's views, are very beautiful, and characteristic of several forms of the disease.

Art. XV.

An Address delivered at the Birmingham Royal School of Medicine and Surgery, at the Third Anniversary Meeting, August 29, 1838. By Vaughan Thomas, b.d., formerly Fellow and Tutor of Corpus Christi College, Oxford.—*Birmingham*, 1838. 8vo. pp. 61.

This address is in many respects deserving of attention. The learned and reverend author is one of those members of the church in whose varied acquirements, classical, theological, and medical, may be recognized traces of the ancient connexion existing between these studies; and who, by watchful superintendence and unwearied charity, become the most effective allies of medical men in their exertions for the general benefit of the sick and distressed. As the friend and distributor, in many instances, of the bounty of the Rev. Samuel Warneford, he has acquired an intimate practical knowledge of the working of the various medical charities which that most philanthropic gentleman has assisted, or supported, or established, or enriched.* We introduce the name of Dr. Warneford on this occasion not only because he presents an instance of almost unexampled generosity to numerous medical charities, but because, not content with supplying them with the means of doing good, he devotes a large portion of his time, at an age which many would consider as affording an excuse for declining all active labours of such a kind, to inspecting the best-conducted hospitals, and to assisting in the management of several of the institutions to which he has secured prosperity; where, by the example he gives of unbounded liberality, conjoined with the most exact and scrupulous economy, he contributes to establish such a system of government as may secure their extensive and permanent utility. Wisely deeming, also, that no more important

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* To the Radcliffe Lunatic Asylum, near Oxford, Dr. Warneford and his sister have contributed not less than fifteen thousand pounds! The Leamington Hospital has also received three or four thousand pounds from the same source; and we believe that even these large donations form but items among the acts of benevolence exhibited by this distinguished family towards the public institutions of Oxfordshire, Warwickshire, and Gloucestershire.

benefit can be conferred on medical charities than supplying them with carefully educated medical officers, Dr. Warneford has directed some portion of the wealth which he administers to so many good purposes, to encouraging medical education. His presents of books to the library of the Birmingham Medical School have been numerous; and his donation of £1000 to the same school is the immediate occasion of the address before us, the object of which is to explain the conditions of the grant. It is to be applied for ever to affording two annual prizes for the best Essay on Anatomy, general, descriptive, and pathological, or on Physiology, written " in a practical or professional manner, and according to those evidences of facts and phenomena which anatomy, physiology, and pathology so abundantly supply; but always and especially with a view to exemplify or set forth by instance or example the wisdom, power, and goodness of God, *as revealed and declared in Holy Writ.*"

On this text Mr. Vaughan Thomas discourses eloquently, learnedly, and fully; with many scholastic divisions, and not a few unusual terms. The address is printed with marginal capitals, the leaders, each, of five lines of type: and marginal headings are let in after a somewhat antiquated fashion. With all this, the address is less correctly printed than such an imposing appearance should ensure; and even a table of eight flagrant *errata* does not comprehend more than half of the typographical blunders. We should not notice this but for the curious peculiarity of the pages, the aspect of which probably reflects in miniature some venerable and seldom turned folios in the Bodleian, for which Mr. Thomas has a scholar's affection. Of Dr. Warneford's truly pious intentions, and of Mr. Vaughan Thomas's earnest and able exposition of them, it would ill become us to speak in any terms but those of sincere respect. How far medical students in a provincial school may be able to comply with the peculiar conditions, admits of question; and we confess that we are so doubtful of the benefit derived by religion from the constant practice of writers, now-a-days, to quote every circumstance in nature as proving the precise attributes of the Deity, as to fear the subject of revelation will suffer some damage if the same violence be done it after the same fashion. The zeal and warmth with which every function of every plant and animal is now laid hold of as a proof of the wisdom and power of the Creator, after the manner of the Bridgwater Treatises, implies an accusation levelled against some presumed mass of unbelief on such points : and we are sometimes disposed to exclaim, " quis vituperavit?" These instances are often ill selected; sometimes absurd. Still more difficult is it, even for the most learned divine and accomplished naturalist, to select with judgment appropriate analogies (the existence of which we are far from denying) between the will of God as revealed in the works of nature and in Holy Writ; and the committal of such a task to a student is a somewhat delicate matter, and will require the utmost circumspection in the teachers and governors of the school. We do not doubt, however, that this will be duly considered and well attended to in the Birmingham school; to the respectability, efficiency, and prosperity of which we have had other occasions of bearing testimony.

The *curriculum* proposed in the University of London has, we believe, led to the adoption of some alterations in most of the provincial schools; and the general result will unquestionably be that the literary attain-

ments of the medical pupils and medical men will be increased.   We do not mean that scholars will more abound among them ; but that fewer of them will be imperfectly prepared for entering on the studies of medicine and surgery.   It would be wrong to conceal that medical practitioners in the country view the provincial schools with some dislike, and avow their belief that they tend, by rendering medical education too cheap and easy, to fill country towns with ill-educated practitioners.   This, if true, would constitute a very serious objection to them ; but it is very difficult to establish either the correctness or incorrectness of the allegation, and we are ourselves disposed to lay very little stress upon it.   We have some fears that the discipline of the country schools is inefficient ; but even in this respect they cannot exceed some of the schools of London, where the pupils constitute a democracy, to which, for the meanest purposes, the professors having once willingly bowed must be slaves for ever   In all schools of medicine, we apprehend, there is some little tendency in the teachers to anticipate the period when the pupils will be practitioners, and seek the assistance of their honoured preceptors ; and to this kind of influence, from local circumstances, a country teacher is peculiarly exposed.   The check and remedy, however, lie in the hands of the examining bodies of the profession ; and we see no room to doubt their vigilance.

We perceive, by the last Annual Report of the Birmingham School, that the nobility and gentry of the neighbourhood take an interest in its progress ; assist it by donations ; and encourage its active friends by attending the periodical meetings.   The school has thus been enabled to form museums of anatomy and natural history, and to offer many helps to the pupils, of which, before the establishment of University College, London, they had not a free command in any school in the metropolis.

It is with some unwillingness that we allude to the portion of the address in which, in a pardonable zeal for the welfare of King's College, London, some of the teachers of anatomy and physiology, in other schools, are accused, by " mingling lessons of infidelity with anatomical and physiological instruction,"—of doing what they can " to rob God of his glory, and man of his gratitude ; moral virtue of its best support ; human reason of its surest guidance ; and professional attainments of their brightest honour."   This charge was made, it appears, in the presence of many medical men ; and in our opinion it ought to have been noticed at the time.   We conceive it to be quite unfounded. Medical teachers, doubtless, differ, no less than other teachers, respecting many religious doctrines and some articles of belief ; but the general accusation of infidelity, and of mixing up such infidelity with their professional lectures, is too serious to be made without adducing the particular instances, which we think it would not be easy to do.

PART SECOND.

Bibliographical Notices.

ART. I.—*Observations on certain Parts of the Animal Economy, inclusive of several Papers from the Philosophical Transactions, &c.* By JOHN HUNTER, F.R.S. *With Notes, by* RICHARD OWEN, F.R.S. &c. (*Being* Vol. IV. *of* PALMER's *Edition of the Works of* HUNTER.)— *London*, 1837. 8vo. pp. 506.

WE have already more than once noticed Mr. Palmer's edition of the works of John Hunter, and we shall probably refer to it on many future occasions. It is unquestionably the most valuable medical publication that has appeared since the commencement of our labours, and must claim a place in the library of every scientific member of our profession.

The volume to which we would now call the attention of our readers is, in some respects, the most interesting of the four. In it we see collected, for the first time, from various publications, those invaluable memoirs on subjects of natural history and physiology, which are not only full to overflowing of curious and important facts, but moreover contain the germs of many discoveries worked out by subsequent enquirers, as Bell, Magendie, Mayo, and others. The lapse of half a century since the publication of most of them has only tended to stamp more deeply their character for originality, fidelity, and wisdom. To speak of the whole works of John Hunter in other terms than of the highest commendation, or to refuse to acknowledge the depth, acuteness, and comprehensiveness of his genius, and assign him the first rank among physiologists,—now that the age of jealous rivalry is past,— would not be more unjust to his reputation than derogatory to the honour of our profession and country.

Our object in the present brief notice is chiefly to call the attention of the profession to the work itself, without any attempt at analysis or criticism : but we cannot refer to its contents without pointing out one or two of the numerous examples which it affords of facts, views, and opinions overlooked by Hunter's immediate successors, and promulgated, with more or less pretensions to novelty, by subsequent enquirers. We must also express, in a few words, our great satisfaction at the manner in which the task of preparing this volume has been executed by Professor Owen; than whom, perhaps, few men have evinced a more truly Hunterian spirit in prosecuting Hunter's favorite studies of natural history and physiology. He has indeed performed the laborious and self-imposed duty of annotating the original text in a most masterly manner, and with that fidelity and care which the importance of the object demanded. On every subject the information is brought up in the notes to the level of the present time; so that those who possess the " Animal Economy" in its new form will be able immediately to judge of the advance which science has made since the time of the author, and

will perceive how vast a foundation was laid in these papers for after-discoveries.   Mr. Owen has carefully pointed out many facts and principles originally established by Hunter, which have been more fully worked out and given to the world as new by succeeding physiologists. Thus, on the subject of *animal heat,* the principle that the adult animal has a higher temperature than the very young one, and that, after the animal has acquired the perfect or adult condition, it soon begins again to lose its power of generating heat, and approaches to the condition of the young animal, was first laid down by John Hunter, in his papers on this subject; although since generally attributed to Dr. Edwards, chiefly because it has been worked out by him.   The most important facts elucidated by Dr. Edwards are clearly stated in the following extract:

"This variety (in the power of producing heat) not only takes place in animals of different orders, but in some degree in the same animal at different ages, even according to the different age of the parts in the same animal: a young animal requires more warmth than one full grown; and, although an animal is equally old in all its original parts, yet there are often new ones formed in consequence of diseases: and we find that these new or young parts in animals are not so able to support life as the old, at least for some time; but as animals are of different ages, and the same animal is always growing older, and of course more and more perfect, they then become more capable of generating heat than when they are younger.   This, however, has its limitations; for, after a certain period, they again lose this power, and therefore require a less strongly conducting medium or warm atmosphere." (p. 134.)

Again, the facts stated by Dr. Davy, in his paper in the Philosophical Transactions for 1814, respecting the difference of temperature of different parts of the body in health, proving that those parts have the lowest amount which are farthest removed from the centre of circulation, appears to have been well understood by Hunter, as may be gathered from his observations on the temperature of different parts of the body, (pp. 140-2,) and more directly from the following remark :

" From experiments on mice and upon the dog, it plainly appears that every part of an animal is not of the same degree of heat; and hence we may reasonably infer that the heat of the vital parts of man is greater than either the mouth, rectum, or the urethra." (p. 146.)

The distinction which has been drawn by Dr. Marshall Hall, in his paper on *Hybernation,* in the Philosophical Transactions for 1832, between torpidity and sleep was equally well known to Hunter, as is remarked by Mr. Owen (*note,* p. 144;) and it is a somewhat curious circumstance that Dr. Hall has quoted other parts of the very paper in which Hunter points out the distinction, but has overlooked this, and also the statement at p. 144, that "beyond this point" (i. e. the degree of cold which acts as a sedative and produces sleep,) "cold seems to act as a stimulant, and rouses the animal powers to action for self-preservation."   Dr. Hall also quotes the experiments of Hunter on the dormouse (Nos. xii. to xvi.) in illustration of this, as his own opinion respecting the operation of cold; but fails to notice the fact of this very opinion having previously been advanced, as we have shown, by Hunter.

On the subject of *Digestion,* Hunter's views have been proved to be equally correct with those on animal heat.   The facts recorded in his celebrated paper " On the Stomach itself being digested after Death," have been fully confirmed by many of our most distinguished pathologists, as Baillie, Wardrop, Carswell, and others, both by observations

made after death on the human subject, and (by Dr. Carswell) by experiments on rabbits, as noticed by us in a former Number of this Journal. We have ourselves repeated the experiments of Dr. Carswell on rabbits, and with nearly similar results. Moreover Prout, Children, Prevost, Le Royer, and more recently Drs. Beaumont and Dunglison, have all confirmed Hunter's opinions respecting the acidity of the gastric juice.

What led the mind of John Hunter so far to surpass his contemporaries, and anticipate subsequent enquirers upon almost every subject, was his persevering and determined pursuit of facts obtained by careful observation, and the almost entire dependence of his opinions upon what was supplied by anatomy, and had actually been examined by himself. It was this mode of proceeding which led him almost instinctively to perceive the laws by which the different functions of the animal body are regulated, and the relative position which animals occupy in the scale of creation. We would hold up Hunter's mode of proceeding to all who are desirous of establishing a reputation for science upon a sure basis, as the only means by which it can be rendered permanent and great. As a proof of the correctness of this opinion, it may be remarked that, where Hunter failed to form correct views with regard to the nature and uses of parts, the defect arose from his not having studied facts with his usual degree of scrupulous attention. An instance of this kind may be seen in his opinion with regard to the use of the vesiculæ seminales. Hunter regarded these structures not as seminal reservoirs, as they had been considered by previous physiologists, but as glands secreting a peculiar mucus, (p. 33:) he, however, acknowledged that he was unable to ascertain their peculiar use. Now, had he examined these structures with his wonted care, and had compared them with similar structures in all other classes of animals, particularly in many of the invertebrated tribes, to which upon some other points he devoted so much attention, he would probably have arrived at a different opinion, and have considered their primary use to be that of receptacles for the semen, as they had previously been thought; and perhaps also, as recently suggested by Dr. Davy, (see our last Number,) and also by Hunter himself, as secreting a mucus to be mixed with the semen for the purposes of generation.

ART. II. — *On the Objects and Mutual Relations of the Medical Sciences: an Introductory Address delivered at the Middlesex Hospital School of Medicine, October 2, 1838, at the opening of the Winter Session.* By FRANCIS LEIGHTON, M.D., Lecturer on Forensic Medicine at the Middlesex Hospital School of Medicine.—*London,* 1838. 8vo. pp. 51.

THIS elegant and judicious discourse, on which we have space only to make the briefest comment, may be regarded as a very pleasing indication not only of the lecturer's acquirements and his liberal views of science, but of the attainments and character of the pupils to whom such discourses are addressed. We observe with the sincerest pleasure such proofs of the respectability of any school; they afford a most grateful contrast to the wordy advertisements into which it was sometimes thought expedient, not many years ago, to dilate such addresses, as a foreshadowing of cheap and ready certificates.

ART. III.—1. *A Dictionary of Practical Surgery: comprehending all the most interesting Improvements from the earliest times down to the present period, &c. &c.   The Seventh Edition, revised, corrected, and enlarged.* By SAMUEL COOPER, Professor of Surgery in University College, London, &c. &c.—*London,* 1839.   8vo. pp. 1518.

2. *Lexicon Medicum, or Medical Dictionary: containing an Explanation of the Terms in Anatomy, Botany, Chemistry, Materia Medica, Pharmacy, Physiology, Practice of Physic, Surgery, &c. &c.* By the late ROBERT HOOPER, M.D. F.L.S.   *The Seventh Edition, revised, corrected, and enlarged.* By KLEIN GRANT, M.D. &c.—*London,* 1839. 8vo. pp. 1408.

IT will not be expected that we should devote much space to the notice of works which are probably, by this time, in the hands of most of our readers, and the preceding editions of which, at least, must be familiarly known to the whole profession. As in the exercise of our duty, however, we had to examine them, so are we bound, by the same obligation, to report the result of our examination. Works that are universally read or consulted have a fearful influence for good or evil; and it is our business to point out to our readers what they may seek and what they must eschew.

1. The Dictionary of Professor Cooper has been always regarded, both at home and abroad, as one of the most valuable productions of modern times.   It has ever borne the impress of its author's estimable character, being marked by fulness, candour, and truth.   The present edition is larger, by a sixth or seventh, than the preceding, and contains all the recent improvements that have been made known in this and other countries.   The work is indeed, as it now stands, a complete encyclopædia of scientific and practical surgery, and is not merely suited to the young practitioner who has yet to learn his profession, but is fraught with so much recondite learning and practical information as to claim for it the attention of the most experienced surgeon.   One conspicuous feature of this dictionary, its copious and accurate *Bibliography*, (which has been happily imitated, if not surpassed, by Dr. Copland,) renders it especially useful to all who are desirous of studying surgery extensively and as a science.

2. Dr. Hooper's Dictionary is of a different stamp, as to its plan and object; and it must be admitted to have been of very inferior execution, until it passed through the hands of its present editor.   Now, indeed, it will yield to none of its competitors in point of excellence; and will stand, with them, a permanent memorial of the industry, learning, and talents of its authors: we say authors, because it will be found, on examination, that the work, as it now stands, is more the production of Dr. Grant than of Dr. Hooper.   Indeed, had the editor been so minded, he might have placed his name first, if not singly, on the title-page, with fully as much propriety as a celebrated professor of the present day has blazoned his own to the occultation of the original author's.   At any rate, whether he claims it or not, the merit we have indicated will be accorded to Dr. Grant by all who will take the trouble, as we have done, to compare the present edition with the former.

We consider the original plan of this dictionary essentially faulty, "inasmuch as it attempts to combine the objects of a technological lexicon with those of a compendious cyclopædia of the medical sciences." We regard the successful attainment of these two objects as impossible within the limits of a work of this sort, extensive as these now are. We think it would have been better to have left all *details* respecting the various branches of science, including medicine, to works of larger size, and specially devoted to this purpose, and to have constituted this volume a mere dictionary of terms, of definitions and derivations. We must admit, however, at the same time, with Dr. Grant, "that there must be something in its plan which is generally useful and adapted to the wants of a large class of readers;" else the previous editions could never have attained the very extensive circulation they have so long enjoyed. "The object of the editor, therefore, has been to improve it in its details, without altering the general principle of its construction;" and we can safely assure all those to whom the former editions were acceptable, that they will find this in every way greatly superior. Everything that was antiquated has been removed or renovated; a vast mass of errors, in the lexicographical part more especially, has been corrected; and the whole brought up to the level of our present knowledge. In accomplishing this important and very difficult task, Dr. Grant has evinced, in a striking degree, great talents, great industry, and accurate and extensive learning. Were not the volume before us so useful, we could almost regret that Dr. Grant had not engaged in some more original work, in accomplishing which his merits ran no risk of being lost in those of another.

ART. IV.—*A Letter to the Inhabitants of Ceylon, on the Advantages of Vaccination.* By J. KINNIS, M.D.—*Ceylon*, 1837. 8vo. pp. 28.

THIS is a well-written and interesting pamphlet on the subject of the past history of small-pox, and the present state of vaccination, in Ceylon. In a simple and affectionate address to the inhabitants of that island, Dr. Kinnis reminds them of the awful visitations which they have suffered from the small-pox; and, by tracing the history of each epidemic up to the year 1837, he satisfactorily demonstrates that their sufferings from this scourge have been entirely occasioned by their neglect of vaccination. This devoted island had, in former years, been the scene of frightful devastation from small-pox, which carried such terror into the minds of the natives, that, in several instances, upon the occurrence of the disease in a town or village, all the inhabitants fled, voluntarily incurring the miseries of hunger, and leaving their homes to be overrun by the wild beasts of the forest, rather than wait the attack of this still more fearful enemy.

Vaccination was first successfully performed in this island on the 11th of August, 1802; and its beneficial effects were soon manifest. By the end of 1802, small-pox was banished from the district of Hambuntotte; 1803 saw its extinction in the district of Colombo. By April, 1804, Galle and Matura were freed from it; Taffna, in 1806; and in January, 1806, five years and a half from the introduction of vaccination, the disease was extinct in the whole of the British possessions in Ceylon. A

few cases appeared at intervals between this time and 1810; but, from this date till 1819, the disease was not known.   The consequence of this immunity was, that apathy and indifference to the means of their preservation took place of the vigilance and activity which their former sufferings had excited.   Vaccination became gradually more and more neglected, until the enemy again suddenly appeared at their doors, and found the poor Ceylonese unprepared to resist him.

" During the six months terminating on the 15th January, 1820, in the maritime districts alone 5,451
persons were ascertained to have had the disease, and . . . 1,745
to have died, being nearly in the proportion of . . . . 1 to 3
or more exactly of . . . . 10 to 31
and, during the five months terminating on the same day, in the Kandian provinces 2,423
were admitted into the hospitals established for their accommodation, and . 1,200
died; being nearly in the proportion of . . . . . 1 to 2
    " The total number of cases reported to government in the six months during which the disease chiefly prevailed, was 7,874
and the total number of deaths 2,945
being in the proportion of . . . . 10 to 26
    " This *awful punishment*, (says Dr. Kinnis,) inflicted alike on the guiltless child and its improvident parent, was brought on the people of Ceylon by their neglect of vaccination." (p. 10.)

This retribution for their neglect of the means of safety had the effect of once more rousing the inhabitants from their apathy, and vaccination was again very generally resorted to.   From this time to the end of the year 1837, the small-pox has been epidemic in Ceylon four times; but in no instance to be compared in severity with the visitation of 1819.

Dr. Kinnis introduces a table which shows, in a striking manner, the coincidence of the epidemic with the gradual neglect of vaccination, and the stimulating influence of present terror in dispelling prejudices and rousing to renewed activity in seeking for future protection.

In answer to the objection raised against vaccination, that it frequently failed in proving a protection, Dr. Kinnis goes on to prove the position with which he commenced, " that, in the small proportion of cases in which small-pox occurs after vaccination, it assumes, in general, so mild a form as to excite little more apprehension than chicken-pox, and to be almost equally free from danger."   During two epidemics, 737 cases of small-pox were reported, of which 550 had no satisfactory marks of vaccination; and of these last 198, died, giving the proportion of 10 to 28; or more than 1 to 3: while, of the remaining 187, who had satisfactory marks of vaccination, only 3 died, giving the proportion of 10 to 623, or 1 to 62.

We have been more desirous of noticing this small but valuable defence of vaccination, because the subject is one which excites at the present moment so deservedly strong an interest, from the very general prevalence of small-pox. Although we lament that the fond anticipations of the great Jenner have not been as yet realized, we entertain no doubt whatever of the efficacy of his invaluable discovery; we would even go as far as the immortal discoverer himself in our anticipations of success; but then we must extend our view to the time when vaccination and its merits shall receive that attention in this country which is undoubtedly

its due; when the government shall give the weight of its authority to a plan for the general adoption of vaccination among all persons and classes; and when our own profession, as a scientific body, shall, by union and well-directed cooperation, bring the multitudes of facts and of opportunities for observation which they possess, to bear upon the many difficult and obscure questions which at present surround and check the beneficial progress of vaccination.

Art. V.—*A Treatise on Neuralgia.* By Richard Rowland, m.d.— London, 1838. 8vo. pp. 173.

There is a peculiar unsatisfactoriness in the term neuralgia, as it is applied to designate a symptom of very various diseases. A tumour presses on a nerve, or a nerve is so complicated in the growth of a tumour as to give rise to extreme pain; the cause consists in accumulated fæces, diseased bone, organic disease within the head of various kind, carious teeth, acid secretions in the stomach, &c.; and we call a peculiar pain produced by these and other concurrent causes, neuralgia. The volume before us is a creditable monument of its author's industry in collecting together multitudinous forms of neuralgia from very various sources; but the very nature of the subject is such, unfortunately, that, after having perused the book, we feel the need of some knowledge by which to arrange and systematize the various facts, so as to deduce from them some sound pathological principles and some definite and satisfactory rules of practice; and for this purpose a large number of present facts require, from their incompleteness, to be entirely rejected; they are useless as affording ground for any legitimate deductions. We do not mean by these observations to condemn Dr. Rowland's book, which is well worthy of notice.

The volume commences with some general considerations on the subject of neuralgia; particular forms of the disease are next treated of as occurring in external nerves; the consideration of the disease as occupying internal organs, together with some cases, terminating the volume.

We shall allude to Dr. Rowland's observations on spinal tenderness as accompanying various forms of neuralgia; a subject which we believe to be as much overrated by some medical men as it is underrated by others. We do not mean to advocate any theory on the subject; but merely to state as a fact, that there exist certain pains of a neuralgic character; that tenderness on pressure of the spinous processes of some one or more vertebræ coexists with such pains; and that relief is obtained by remedies applied to such painful vertebræ. The frequency of such a condition, we believe, has been much exaggerated; and we are glad to find Dr. Rowland stating that, " with regard to the frequency of neuralgia from spinal irritation, my opinion does not coincide with the opinion of some recent authors; for, in the majority of cases, I have not been able to detect any sign of tenderness over the vertebral column : I have the authority of Dr. Alison for saying that he has arrived at the same conclusion." It is a question in these cases how far the spinal tenderness is a mere associate of the other pains; for it is not unfrequently found that a tenderness, apparently of the same character, exists in individuals

apparently in good health. The same sign has been much lauded of late as a method of distinguishing from inflammation such abdominal pains as are of a neuralgic character. On this point Dr. Rowland speaks satisfactorily from his own experience. "After a careful examination of a large number of cases, I feel justified in remarking that this diagnostic sign cannot be trusted with safety. It is entirely absent in many cases of visceral neuralgia: and, in some cases of chronic visceral inflammation, unattended with disease of the spine, tenderness over the vertebral column is present." We think it worth noticing that the author has found that the troublesome pains which sometimes accompany shingles, are often instantaneously relieved by touching the painful vesicles with lunar caustic: but that it is generally better to apply the caustic to the whole of each group, or to cover them with a strong solution of this substance. In that affection termed by Sir A. Cooper *irritable breast,* (by the author, *neuralgia mammæ,*) "much benefit may be derived, at least in the milder form of this affection, by the application of leeches, or by cupping over the sacrum or in the uterine region. I have often," says Dr. Rowland, "seen the symptoms disappear under this treatment, when no application has been made to the breast." It does not consist with our limits to make any further extracts from the work before us, which will, however, repay the trouble of an attentive perusal.

Art. VI.—*Ausfürliche Encyklopüdie der gesammten Staatsarzneikunde.* Von Georg Friederich Most, Doctor der Philosophie, Medicin, und Chirurgie, &c. 1stes Heft.—*Leipzig,* 1838. pp. 192.

A Complete Encyclopædia of Medical Jurisprudence. By Dr. George F. Most. First Part.—*Leipzig,* 1838. pp. 192.

Dr. Most has already acquired some reputation as editor of an Encyclopædia of Medicine and Surgery. We hardly expected that medical jurisprudence would have so soon found itself in an encyclopedic form; nor are we satisfied that the plan thus adopted by Dr. Most will render this work so practically useful as he evidently intends it to be. Our opinion is founded on the fact that in legal medicine, more perhaps than in any other branch of science, it is difficult to determine under what head to arrange the numerous and complicated questions to which the different subjects give rise. Unless, then, the whole of the work be read through and studied, it is not likely to become one of easy reference for the solution of numerous important questions. Nevertheless, we are extremely well pleased with the contents of this first part. Although extending over only 192 pages, it contains, owing to the smallness of type, as much or even more matter than numerous large octavos. A great number of interesting subjects are here discussed. Some of the larger articles have the names of the authors attached to them. The subjects of Abortion, Contagion, Arsenic, and Medical Jurisprudence, including a history of the science and its literature, are ably handled. There is also a great deal of practical toxicology, chiefly extracted from Gusserow's treatise, which we noticed in one of our late Numbers. The processes for detecting the oxalic and hydrocyanic acids are well detailed; but it is surely an error to assert that the latter does not redden litmus paper, unless it

contain sulphuric acid.   Each article is accompanied by numerous refer-
ences; and, in general, the synonyms of foreign languages are placed at
the head of it.   We are at a loss to conceive where the editor could have
learnt that the science was called " Juridical Physick" in this country,
or that the practitioner of it was known as a "juridical physician." This
Encyclopædia embraces all the subjects of medical police, and numerous
others in the circle of the medical sciences, in so far as they have the least
reference to the object of this work.   We trust that the future Numbers
will be as rich in information as the first.

Art. VII.—*Flora Medica: a Botanical Account of all the more impor-
tant Plants used in Medicine, in different Parts of the World.*   By
John Lindley, ph.d. f.r.s., Professor of Botany in University
College, London, &c.—*London*, 1838.   8vo. pp. 656.

In this work Dr. Lindley has undertaken to give a correct botanical
description of the various species of plants which are used medicinally in
different parts of the world. To this he has added the synonyms of other
writers, and the vernacular names by which the plants are commonly
known to the inhabitants of the countries where they grow.

The manner in which this task has been accomplished is such as we
expected from a writer of such acknowledged botanical eminence as
Dr. Lindley: the descriptions are clear; the language is in accordance
with the existing state of the science; and the specific characters are
given in considerable detail: all the parts of the plant, as stem, leaves,
and flowers, being particularly described, so that mistakes cannot easily
be made.   But, while we thus approve of the execution of the work, we
must regret with the author (as stated in his preface) that such a book
has not appeared from the pen of a writer who is a medical man, and as
well a pharmacologist as a botanist: for a more detailed account of the
medical properties and active principles, with a more frequent mention
of the diseases in which the different medicines have been advantageously
given—in fact, the addition of a little materia medica to the botanical
descriptions, would have rendered the work more valuable, particularly to
one class of readers, for whose use it was chiefly designed, i. e. medical
students.   The medical properties of the plants are often very briefly
alluded to, and in some instances entirely omitted: thus, when speaking
of the *Papaver somniferum*, after detailing the specific characters, the
author adds, " From the wounded half-ripe capsules flows a juice which
concretes into opium, the well-known powerful narcotic drug." The
uses of this important medicine are thus briefly alluded to, without a
word being said of the chemical principles on which the narcotic proper-
ties depend. In a long article on the *Cinchona*, not a word is said of the
properties of the bark: it is taken for granted that these are well known
to all readers; but a few words might well have been added on the pecu-
liar principles contained in each species or variety, as these are known
to vary in the different kinds, adapting one more than another for admi-
nistration in different forms of disease.

With these imperfections, however, the Flora Medica is a work of con-
siderable value, and will be found particularly useful in clearing up the

conflicting statements which have been made respecting the sources from which many medicinal plants, often of the commonest kind, are derived. By collecting a great mass of evidence, Dr. Lindley has either been enabled to arrive at a correct knowledge of the disputed species, or to show that the suppositions of various writers are erroneous; and that the source of the article is either unknown, or that the drug is procured indiscriminately from several different plants. For instance, the species of *Rheum* from which the real rhubarb of commerce is obtained is involved in much obscurity: it has been said by different authors to be the root of Rheum palmatum, R. undulatum, and R. emodi; and though, as Dr. Lindley says, "the opinion that Rheum palmatum is the source of the true officinal rhubarb continues to be generally entertained," yet it seems very probable "that the officinal drug obtained in the heart of Thibet, whither no botanist has ever penetrated, is the produce of some species still unknown."

In this, as in other doubtful cases, the author has given the botanical characters of all the known species of the plant. A very detailed account of the genus *Cinchona* is given, "to determine, if possible, the real origin of the barks known in trade and used in the shops:" but this seems scarcely possible; for the botanical distinctions between the species themselves are as much embroiled as the knowledge of whence the different varieties and finest qualities of bark are procured. Dr. Lindley describes twenty-four species, and states, as the result of his investigation, that the *pale barks* are chiefly obtained from Cinchona condaminea and C. micrantha; the *yellow bark* principally from C. lanceolata; and the *red bark* from a species not yet ascertained. The trees said to produce the pale and yellow barks in the London Pharmacopœia do not yield that which is employed in practice, and the bark procured from them is so inferior as to be valueless in pharmacy. The C. oblongifolia, to which the red bark is referred, on the authority of Mr. Lambert, yields a bark the nature of which is entirely unknown.

In the plan of this work, the genera are arranged according to their natural families, the sequence of the orders corresponding to that in the "natural system" of the author; but the work is so printed that the different orders may be separated, and rearranged at the pleasure of the professor. In conclusion, we must say that we have derived much pleasure and information from this volume; and we sincerely recommend it to those engaged in teaching botany and materia medica, to whom it will be highly useful as a book of reference. We fear that the generality of medical students have hardly time to make themselves acquainted with the botanical characters of all the medical plants; but those whose destiny it may be to practise their profession in foreign climates will find the Flora Medica a most useful companion.

Art. VIII.—*Handbuch der Reagentien-und Zerlegungslehre, &c.*   Von
   Hofrath Dr. Du Menil.—*Lemgo*, 1836-7.
Manual of Chemical Tests, and of Chemical Decomposition.   By Dr. Du
   Menil.—*Lemgo*, 1836-7.   Two vols. pp. 729.

This work which has been only lately completed, is novel in its plan;
and we have seldom seen one presenting in the same space so great an
amount of useful chemical knowledge.   The author has entirely reversed
the ordinary method of treating the subject, a circumstance, however, of
little importance, when the plan of the work is fully understood.   His
main object has been to bring into as small a space as possible, all the
tests or reagents capable of acting upon any simple substance, or any of
the compounds formed by it.   The two volumes are divided into fifty-
three chapters, a chapter being devoted to each simple body.   In the
first volume we have the metalloids and the alkaline and earthy metals;
in the second we have the true metals.   The difference between the
author's work and a common treatise on chemistry may be judged of
from this brief statement.   We will take for illustration the chapter on
Mercury.   In a chemical treatise all the chemical properties of this
metal and its salts would be described.   Here, however, it is presumed
that the reader already possesses to a certain extent a knowledge of
these.   Dr. Du Menil prefixes to this chapter, the symbols of the metal,
its most striking properties, and a condensed table with the centesimal
composition of its oxides, chlorides, and sulphurets.   Then follow the
reagents under distinct sections, to the number of thirty-four: the differ-
ence, if any, in the action of these upon the salts of the two degrees of
oxidation, as well as the comparative minuteness or delicacy of each of the
most important; so that the point at which the test fails to detect the
metal is numerically stated.   Frequent experiment has convinced us
that if the author have in some few instances exaggerated the effects of
these, his statements are in the main correct and may be relied on.   The
rules for quantitative analysis are given under the appropriate sections;
and the chapter is terminated by a minute account of the action of heat
upon the metal and all of its compounds.   It is the same with every other
metal.   The immense mass of information contained in these two volumes,
would of course be lost unless there were easy means of reference.   We
admire the simplicity with which this end has been most effectually
attained.   At the conclusion of each chapter there is an alphabetical
index, by which each reagent may be immediately found through the
figures attached to the sections.   Besides this, in the second volume we
have a most copious index occupying seventy-eight pages of close type,
in which every reagent in the two volumes is again marked down alpha-
betically; and references given to its separate action upon all the metals
and their salts.   Further, if the reader wish to know how to separate any
two bodies from each other, he has only to refer to a second index follow-
ing the first, expressly adapted for quantitative analysis.   We shall con-
clude our notice of this work by saying that it is a monument of the
industry and learning of the author.   The preparation of it must have
cost him some years of labour: but we trust he will meet his reward in
the well merited reputation which it must acquire for him, both in this
country and on the continent.

Art. IX.—*A Letter to* Dr. Chambers, *on several important Points relating to the Nature and proper Treatment of Gout.* By Sir Charles Scudamore, m.d. f.r.s. &c.—*London*, 1839. 8vo. pp. 59.

Although Sir Charles Scudamore tells us, at the conclusion of this letter, that he has " brought forward many new arguments and new facts and observations, with the design of elucidating the real nature of gout;" and "indulges in the hope" that he has " successfully advocated the pretensions of regular practice, in opposition to empirical methods of treatment;" we must confess our inability, after a careful perusal of the pamphlet, to discover any trace of such facts, or any rational grounds for the indulgence of such hope. They who have read the author's elaborate treatise on Gout will, we think, find nothing new in the Letter; and they who read the letter only will derive little benefit from it, unless it lead them to peruse the treatise. The whole is a rambling, gossiping, ill-written, and ill-arranged compilation from the author's former works, calculated rather to detract from his own reputation, and capable of doing no manner of good, unless it should chance to fall into the hands of some ponderous dowager or plethoric alderman, who might be moved by its eloquent appeals to eschew the dangers of self-treatment and the high-pressure power of colchicum, and submit themselves to rational medication in the hands of Sir Charles himself. Here, we admit, the gain to them would be great; for it is clear that his treatment is on the whole good, although in no respect, that we can discover, peculiar, unless in the continued advocacy of the *acetum colchici*, in preference to the stronger preparations. It is curious, however, that the author should have omitted to state the precise formula or dose of his favorite remedy in a work, the main object of which seems to be to recommend it. At p. 37 he says, " I am led both by theory and experience to prescribe the mildest preparations of colchicum, and those in combination with saline aperients; using this medicine as a valuable palliative for a short period during the existence of the gouty irritation, but not viewing it as the really curative agent. The draught to which I alluded at p. 6," &c. On turning back to p. 6, we read, " With respect to the particular preparation, I have made choice of the acetum, which is much weaker than the wine; this last being prepared with about twelve times the quantity of colchicum; besides that, the acetic acid modifies the principles of the root (?), and gives it a milder operation. I found advantage from joining it with magnesia and sulphate of magnesia; and thus directing its action to the bowels and the kidneys, and using with the vehicle of the ingredients some aromatic water or tincture, it rarely happened that the stomach itself was disordered by the repetition of the dose." And this is the nearest approach we make to the knowledge of the dose of the remedy or the composition of *the draught*. We trust that Sir Charles Scudamore may at least have the satisfaction of having his work looked graciously down on by his friend Dr. Chambers, from " the highest pinnacle of the profession;" and should the College of Physicians, in their new-born zeal for radical reform and medical emancipation, throw their gates still wider for the entrance of licentiates, we hope that the learned inditer of the Letter will not be forgotten, nor the *recherché* compliment emblazoned on the title-page from the writings of that great author Cicero Medicus.

ART. X. — *De Cartilaginum Articularium ex Morbis Mutationes.*
    Auct. L. H. SCHUMER, Jr.—*Groningæ*, 1836.   8vo. pp. 64.
On the Pathology of the Articulating Cartilages.   By L. H. SCHUMER,
    Jun. M.D.—*Groningen*, 1836.   8vo. pp. 64.

THE main question discussed in this essay is, whether the cartilages
possess in themselves sufficient vitality for carrying on the processes of
inflammation, ulceration, &c., or whether the changes, that observation
shows to occur in them, are simply induced by the material action of
disease and its consequences affecting the adjoining tissues.   The author
commences by an enumeration of the doctrines of a host of writers,
which, according to him, afford a melancholy specimen of that triumph
of theory over fact, of speculation over the evidence of the senses, so
often encountered in tracing the progress of medical knowledge: for, he
asserts that, so long since as 1798, Dörner distinctly proved the almost
total impossibility of inflammation affecting the articular cartilages; yet
inflammation of those bodies has since then been regularly admitted into
nosological systems, and its effects dwelt on by a variety of writers.   We
cannot here enter into an examination of this thorny debate, but will
give the reader a brief abstract of the results which induce Dr. Schumer
to deny to the cartilages themselves all active participation in the changes
they undergo.   1. The knee-joint of a goat was cut open transversely,
and the femoral cartilages and synovial membrane touched in several
places with black ink.   The black colour instantly penetrated into the
cartilage, and it was found impossible to wipe it away.   The animal was
killed eight days after, and the blackness of the cartilage found un-
changed: none was discernible in the synovial membrane.   Precisely
the same results followed when the experiment was made on a piece of
dead cartilage.   2. The tibia of a sheep was removed from its femoral
articulation, and the wound dressed in the ordinary manner.   The ani-
mal was killed on the ninth day after the operation, and the femoral
cartilage was found unchanged, although the synovial membrane was
inflamed and covered with false membrane.   This experiment was varied
in other animals, by chopping and cutting away pieces of the cartilage,
and exposing its surface constantly to the air; but invariably with the
same result: neither in colour nor in vascularity did the least change
appear in its condition.   By injecting the femoral artery with mercury, a
multitude of vessels were shown in the circumjacent soft parts and in the
extremity of the *bone;* but not a single globule of the metal entered the
cartilage itself, not even the surface in connexion with the femur.   The
conclusion deducible from these experiments is, according to the author,
very plain.

But if not produced by inflammation of their own substance, how are
the changes observed in those tissues effected?   That the opacity and
yellowish tinge in the cartilages of inflamed joints is produced simply by
the absorption (imbibition) of pus appears from an experiment by Pro-
fessor Sebastian.   He introduced a fragment of cartilage into a fistulous
canal filled with pus: in seven days it had grown opaque, yellowish, and
had lost half its bulk.   The next change ascribed by writers to inflam-
mation is that usually styled *ulceration* of the cartilages.   The destruc-
tion of tissue in these cases proceeds either from the free surface of the

cartilage towards the bone, or from the latter towards the former. In the first instance the cavity is filled with fluid, usually pus, sometimes perhaps diseased synovia. But as, by the experiment above related, it is shown that dead cartilage may be dissolved in the short space of seven days, there can be little doubt but that erosions of the living substance are similarly produced, inasmuch as the living and dead tissues in nowise differ from each other as respects the imbibition of fluids. An analogous process of chemical solution sometimes destroys the epidermis, and is also the cause of the disappearance of the crystalline lens, when pushed into the anterior chamber. Of the second species little is said: the pus or other solvent fluid *must*, according to the writer, in these cases (which are doubtless very rare), exist between the bone and cartilage; but he does not state that he has actually found it so situated.

Softening of the cartilages, or chondromalacia, is also attributed to imbibition of pus. Some intelligent remarks on anchylosis follow; and the whole essay, though some of the experiments detailed may admit of a different explanation from that assigned them, is creditable to the research and acumen of its author.

Art. XI.—*On the successful Treatment of Consumptive Disorders, and Female Complaints connected therewith; on Scrofulous Diseases; and on the Management of delicate Health by Diet and Regimen: with Cases.* By J. J. Furnivall, m.d., Physician to the General Infirmary at Hertford.—*London*, 1838. 8vo. pp. 320.

Whoever reads Dr. Furnivall's little volume attentively, as we have done, will, we are assured, feel with us that he has been very ill advised in publishing it at all; and yet far more so in prefixing to it the title transcribed above. Had we not been informed that Dr. F. is a gentleman above all suspicion, we should have been inclined to believe, on comparing the contents with the title-page, that the author was influenced by motives which an honorable physician would shrink from having attributed to him; so destitute of novelty are the former, so unhappily attractive is the latter. The greater part of the work is devoted to the hygienic treatment of " *delicate health*," in which term he includes tuberculous cachexia and incipient phthisis; but we are not aware that anything of importance is here noticed that the profession had not access to already, in the admirable treatise of Sir James Clark on Consumption, and in Dr. Combe's most valuable " Principles of Physiology applied to the Preservation of Health." Indeed, the volume might almost be regarded as an abridgment of these two works,—although that of Dr. Combe is only slightly referred to, and that of Sir James Clark not even mentioned,—interspersed with various theoretical notions of the author's own respecting the carbonization and decarbonization of the blood, debility of the organic nerves, animal electricity, &c. And, to say truth, bating these theories, the small volume contains much that is both true and valuable in regard to the preservation of health and the prophylaxis of disease, and will be useful to all those into whose hands it may fall who have not seen the works referred to, or others of the same class. Of the importance of such knowledge to the public generally, no one can be

more convinced than ourselves; and, had not Dr. Furnivall provoked us by the unfortunate pretension of his title, we are not sure but we might have quietly recommended his little volume to the class of " general readers," as they are usually termed, without any depreciating criticism : for (to avail ourselves of the author's most quaint and *striking* metaphor) " if the anvil of the human frame, in some individuals, will not safely bear the strokes which the ordinary course of events must cast upon it, it is the duty of the medical practitioner to attempt to strengthen it [the anvil]; or else he ought to direct how such blows may be either safely borne, or altogether avoided."

After careful examination of the chapter on *treatment*—" *successful*" *treatment* it ought to have been, according to the title-page,—and perusal of all the cases, we are sorry to give it as our opinion that this volume contains not a particle of evidence of any greater success in the treatment of consumption than any practitioner, of even a few years' experience, could adduce; and that the medical means recommended are not only common, but scarcely even reaching the level of the ordinary treatment of the disease by scientific physicians in general.   We may even add, with little fear of contradiction from practitioners of experience who are at once pathologists and logical reasoners, that not one of the cases detailed supplies any *proof* of the *cure* (properly so called) of consumption. In many of them there was no satisfactory evidence of the existence of tubercular phthisis at all; and, in the few which presented such evidence, the *very recent* date of the so-called cure vitiated every inference tending to support this view, by suggesting those temporary ameliorations and retardations of progress so conspicuous in a numerous class of these cases, under almost any treatment.

Dr. F.'s more general treatment seems to have consisted in the giving of a grain of calomel, combined sometimes with colocynth, sometimes with Dover's powder, once or twice and a bitter mixture, containing carbonate and sulphate of soda, twice or thrice a day; with occasional emetics, blisters, nitro-muriatic or iodine lotions, and other means in every-day use.   We had marked for quotation some of Dr. F.'s cases, as specimens of his treatment, and as proofs of the justice of our remarks, but we are prevented from extracting them by want of room : had our object been to justify these remarks completely, we need only have transcribed the greater number of the cases in the volume.

ART. XII.—*Illustrations of Osteology*. By THEODORE S. G. BOISRAGON, M.D. —*London*, 1839.   Large folio.

THIS work consists of plates beautifully drawn and lithographed by Dr. Theodore Boisragon, with corresponding sketches in outline, in which all the individual parts are named and briefly described.   The present fasciculus contains three plates; and we believe that two more plates, to be published shortly, will complete the small work.   Many years since, when the actual subjects of anatomical study were less generally accessible, these plates would have been invaluable: they will still be found very useful to the solitary student, who is making preparation for his career at some great school.   Dr. Boisragon shows, in these plates, such excellent skill and taste, that we regret his talents were not employed on a more important and more promising undertaking.

Art. XIII.—*An Essay on Food, in which the received Doctrine of Modern Physiologists respecting the Waste of the Body is exploded; the cause of Animal Heat is explained upon New Principles; the source whence Nitrogen is derived by Herbivorous Animals is established; General Rules for the Preservation of Health are laid down; and the wisdom of the Divine Economy in all is vindicated.* By W. Grisenthwaite, author of a Refutation of Paine's Age of Reason, &c. —London, 1838.   8vo. pp. 119.

The refuter of Paine's Age of Reason, and the author of this long title-page, presents one of the many examples in the present day of persons determined to vindicate the Creator according to their own views, as if the wisdom of the creation was dependent for proof on their particular fancies.   We consider all this kind of writing as very unprofitable. The religious are not edified by it, and in the irreligious it does but raise a sneer.   We have no doubt that Mr. Grisenthwaite, who is not a medical man, is a highly respectable and intelligent person.   He dates his book at Beckenham Manor House, in Kent, and dedicates it to the Earl of Leicester, more distinguished and better known as Mr. Coke, of Norfolk; whose life, the author says, furnishes the best commentary upon the doctrine contained in it.   We venture to assert that the said preface is written by more than one writer.   At all events, some passages are well written, and some very ill expressed.

Mr. Grisenthwaite considers that the "almost sole use of food" is to preserve the temperature of the body.   Except during growth or after injuries, he maintains that "there are no such operations in the animal economy as nutrition, assimilation, or reparation of waste."   He devotes some pages to showing how many medical authorities have supported the grievously erroneous notion that the body requires nourishment and repair.   He proceeds to show that a certain quantity of carbon is consumed by the lungs, which precise quantity is furnished by the food; more carbon being evolved whenever food is taken.   The heat thus produced is just that, he maintains, which is lost by the body; and the sanguiferous apparatus brings back the blood to the heart, before it has lost any of its heat, so as to keep the temperature everywhere equal. This doctrine and its consequences are elaborately defended by arguments drawn from chemistry.   There is such an air of candour and good faith about the writer that we must quote a page of his conclusions:

"If any professional man should read this essay, and feel any qualms about the conclusions drawn in it, I beg to request of him to satisfy himself upon the following particulars, before he passes judgment.   Are eleven ounces and a half of carbon consumed in respiration during twenty-four hours?   And do thirty-five ounces of bread, or about twenty-nine ounces of bread, and between twelve and fourteen ounces of meat, just furnish that quantity?   Do the kidneys secrete three pounds of fluid a day, consisting of substances which exactly contain the nitrogen found in these twelve or fourteen ounces of meat?   Will eleven ounces and a half of carbon, on combination with oxygen gas, impart four degrees of temperature per hour to the whole system, supposed to weigh one hundred and forty pounds?   And does the body lose more heat than this in the same time?   And can any other method be devised, by which an *equable* temperature could be so admirably preserved?   Does not the energy of the body—within certain limits—evidently depend upon this temperature?   How can I prove that the body wastes?   What new arrangements are made out of the waste

elements? How do they get into the circulation? and why, when there, since they are composed of the *same* elements as the fibres that remain, do they not go again to repair that waste? And why does waste take place more rapidly during digestion? Why does the lion waste four times as fast as man, even when he lives in a state of inactivity? If he can answer all these questions differently from those contained in this essay, he will not only destroy all my conclusions, but scatter to the winds the labours of the greatest men that ever adorned the annals of science. To me I hope he will deal with a gentle hand, seeing that I write for men of my own size; and have only been drawn into these speculations from a love of truth, and a desire to benefit—however slender my effort—the generation in which I live." (p. 114.)

One piece of wisdom, at all events, Mr. Grisenthwaite has learned: namely, to live sparingly. Allowing that about thirty ounces of bread, or substances composed of the same elements, and twelve ounces of meat a day, are sufficient for a man who weighs ten stone, and who breathes twenty times in a minute; he says his own consumption of food (he breathes but fourteen times in a minute), and that of his children, is not equal to *half* that quantity, and their health is excellent. He is himself quite unacquainted with sickness: twenty ounces of food are his maximum, and he can walk seven miles " on a winter's day, that shuts the forty-ounce eaters within doors." Of ale, wine, or spirits, he takes none; but he now and then suffers a little punishment if he takes more than twenty ounces of *fluid* (tea or coffee) in a day. We hope he will long live to enjoy such rare health, and to meditate on chemical physiology.

Art. XIV.—*Prostitution in London; with a Comparative View of that of Paris and New York, as illustrative of the Capitals and Large Towns of all Countries; and proving Moral Depravation to be the most fertile source of Crime, and of Personal and Social Misery. Illustrated by numerous Plates, showing the Diseases.* By Michael Ryan, m.d.—*London,* 1839. 12mo. pp. 447.

After carefully examining this book, and reading as many of its pages as disgust would permit, we do not hesitate to pronounce it disgraceful to our literature. It is a wretched compilation, almost as low in its literary qualities as it is loathsome in its spirit and in its details. We thought it impossible that anything could go beyond the work *On Marriage,* reviewed by us in a former Number; but the volume before us has shown that even " in the lowest deep a lower deep" of obscenity and filth remained to be explored. The notice which we took of Duchatelet's work *On Prostitution in Paris,* and the commendation we bestowed on it, suffice to show that we have no wish to eschew the consideration of such subjects, and that we do not regard them as unimportant, or unbecoming the dignity or decency of medicine. Had the present work given us similar information respecting London, we should have received it with respect and even thankfulness. But the volume before us is in character and tendency entirely different. With the exception of a bad abridgment of Duchatelet's book in the commencement (the only portion of the volume, in our opinion, of the slightest value), we have no record of statistical facts of the least importance, and scarcely a particle of information respecting London that was not known to every reader of the

morning newspapers, or of the reports of the excellent societies established in the metropolis for the suppression of vice and immorality. This circumstance we wish particularly to impress on the minds of our readers, lest they might be seduced, by the prospect of important information, to overleap or wade through the polluting barriers by which they might expect, from former experience, to find it surrounded. The greater portion of the volume is filled with details of the most disgusting kind, selected from the commonest sources of impurity, crowded one upon another, pell-mell, page after page, without any necessary connexion with the professed subject of the work, unredeemed by the slightest tincture of utility, and only calculated—we do not say intended—to pander to the vilest and most depraved tastes.

If it were worth while to criticise a production which has no claim either to scientific research or literary merit, we might begin with its title. To show that *moral* depravation is the most fertile source of crime may not be very difficult: many, however, will have doubts as to whether it be the most fertile source of personal and social misery. At any rate a physician worthy of the title might, one would think, have learned that personal and social misery are also most fertile causes of moral depravation. It would do no dishonour to the authors of indecent books if they had such a plea to offer. Yet, even in that case, we should be inclined to take Dr. Samuel Johnson's view of the matter; and if assured by such apologists that "they *must* live," to reply, that we did not see the *necessity* for *that.* Our readers may well suppose that the task of noticing such works as that before us is none of the pleasantest. But neither this consideration, nor the effrontery with which such outrages on decency are defended, on the score of their being profitable, must avert us from the performance of a duty devolving upon us as journalists, or make us forget what is due to the honorable profession under the sanction of the honorable titles of which such abominations are shamelessly committed.

Art. XV.—*Observations on Homœopathy and Animal Magnetism, as illustrating the necessity for the employment of Caution in pronouncing a Judgment upon assumed Discoveries in Medical Science; forming a Lecture, introductory to a Course on the Practice of Medicine, delivered at the Royal School of Medicine and Surgery, Pine-street, Manchester, October 3, 1838.* By James Lomax Bardsley, m.d., f.l.s.—*Manchester,* 1838. 8vo. pp. 31.

This lecture contains, as might be expected from its highly respectable and accomplished author, a temperate and able statement of the two chief medical delusions of our time, Hahnemannism and Mesmerism revived. The first of these makes so little progress, and the second is so fully treated of in our present Number, that any remarks upon either would be superfluous; but we can justly congratulate the Manchester medical students on possessing so judicious and reasonable an instructor as Dr. James Bardsley, who can distinguish truth from error, and combine great zeal in the cultivation of practical medicine with the exercise of a sound judgment concerning pretended discoveries in it.

PART THIRD.

Selections from the British and Foreign Journals.

I. THE FOREIGN JOURNALS.

ANATOMY AND PHYSIOLOGY.

*On the Fibres of the Spinal Marrow and Sympathetic Nerve in the Rana
Esculenta.* By Dr. A. W. VOLKMANN, Professor of Physiology in Dorpat.

[THIS paper forms an interesting addition to the treatises which are becoming
daily more numerous, on the structure and arrangement of the primitive elements
of the nervous system. Its author was led to an investigation of these organs
through his enquiries into the phenomena of reflex-motory functions. These phe-
nomena prove that the spinal cord is something more than the aggregate of the
nerves proceeding from it—that it possesses attributes somewhat allied to the
" organ of the soul," and, consequently, would lead us to expect that its structure
is more nearly allied to the brain than to the nerves. And this is corroborated by
observation. The author is of opinion that as yet we cannot presume to decide
upon the subject of structure even, although the best authorities on this point differ
less in their descriptions than in the conclusions they have drawn from their obser-
vations. We give here the principal results of the Professor's researches ; leaving
it, and, indeed, recommending it, to those who feel sufficient interest in the sub-
ject to peruse the original.]

The primitive fibres of the medullary substance appear sometimes cylindrical,
and sometimes varicose: both forms occasionally presenting themselves in the
same preparation. It is probable that in the undisturbed state only one of these
characters prevails : and, as it is less probable that an uniform cylinder would be pro-
duced out of a varicose fibre than *vice-versâ*, it may be assumed that the cylinder
is the natural condition, and that it becomes converted into the irregular varicose
fibre by means of the disturbance consequent upon preparation. The most recent
investigations of Krause, Treviranus, E. H. Weber, and myself, have tended to
confirm the opinion that the cylindrical form is not only the most prevalent (to
say the least) in the nervous system, but that in some parts it is the universal cha-
racter of its fibres. The following are the principal grounds which lead to this
conviction.

1. E. H. Weber and myself found that in the valvula cerebelli of small animals
the fibres are uniformly cylindrical; a circumstance of great importance, since this
is the only part of the nervous system thin enough to allow the structure to be in-
vestigated without previous preparation.

2. All observations showing the cylindrical structure to prevail in cases where
water has been employed in the preparation are inadmissible, since water possesses
the property of converting the cylindrical into the varicose form. If this be tried
(as Krause has shown) it will be found that the fibres become at the same time
evidently shortened.

3. Whenever mechanical force is applied, the same objection may be made ;
and it is not requisite that the nervous matter should have been formally prepared
to show this, for the mere tearing or separating a portion of this substance is
sufficient to give rise to this change.

4. It is found that the greater the care with which these disturbing agents are

avoided, the fewer will be the number of the varicose fibres; sometimes, indeed, they are entirely absent. The best way to examine nervous substance is to make use of albumen, serum, or saliva, as the moistening medium; and, in order to get a portion sufficiently fine for viewing under the microscope, rely more upon the gentle separation of larger pieces, by means of fine needles, than endeavour to separate a portion sufficiently delicate at once by using scissors. In this manner single fibres frequently become visible, and are generally of a cylindrical form.

5. It not unfrequently happens, however, that even where these objectionable forces are applied, some of the fibres—and often to a considerable extent—present the cylindrical character. This circumstance proves that, however true it may be that the contact of water and the use of mechanical force generally produce an alteration in form, yet it is not so universal as the opponents of Ehrenberg maintain.

These facts lead me to the conclusions—

1. That the fibres of the brain and spinal marrow have, for the most part, a cylindrical form.

2. That the varicose fibres are, in the majority of instances, the result of preparation.

3. But that the existence of varicose fibres in some parts cannot be absolutely denied. The fibres of the spinal marrow in the frog, as, probably, in all other vertebrated animals, take a tolerably parallel course in the longitudinal direction, without the least indication of transverse fibres or anastomoses, which the phenomena of reflex functions would almost have led us to expect. As circumstances establishing the analogy between the structure of the brain and spinal marrow to be greater than that between the latter and the nerves—may be adduced: 1. The extreme fineness of the primitive fibres, the average of which may be stated at 0·00015 inch, whilst the measurement of the primitive filaments of the ischiatic nerve lies between 0·00045 and 0·00070 inch. 2. The frequent appearance of the varicose form, which, although it may be attributable to the causes named, becomes, nevertheless, in so far, characteristic of these portions of the nervous system. And 3. The easy disruption in a transverse direction, taking place without the application of more force than is necessary to separate the filaments one from the other. The reverse of this is the case in the nerves themselves; a circumstance which may, perhaps, with justice be attributed to the investing neurilema of the nervous fibres.

There are also globules within the substance of the nervous mass: these are considered by Ehrenberg to be merely the remains of fibres; but I am of opinion that they form an essential part of the medullary substance; for they are frequently found to exceed by far the dimensions of the filaments, nor are they angular or irregular, as we should in that case expect them to be; besides which, their position amidst the fibres, and their being devoid of such irregular portions of filament as must sometimes be left attached to them, provided they were broken down fibres, seem to indicate that they have a separate existence.

The spinal cord of the frog exceeds by far the combined volume of the nerves arising from it. The author gives a careful measurement of each nerve at its origin, and, doubling the total for both sides of the body, gives the proportional diameter of the nerves to the spinal cord as 0·0817 inch to 0·1100 inch. This fact and the circumstance above named, that the fibres of the spinal cord are much finer than those of the nerves themselves, seem likewise to justify the inference that the filaments of the former are (say ⅔) more numerous than those of the latter. This question assumes considerable interest when we reflect upon the probable function of these supernumerary filaments, particularly in making comparative reference to the brain, which, without doubt, possesses a vast preponderance of fibres over and above such as seem to be continued in the substance of the nerves. This consideration, too, appears conclusive in regard to the opinion that the spinal cord deserves to be considered as a central organ. If those filaments which Ehrenberg first observed (and I have frequently confirmed his statement) to pass from the spinal cord along the nerves given off from it, are subservient to

motion and sensation, as we may reasonably suppose, what is the function of those which remain? The superfluous fibres of the brain may be supposed to be necessary to the formation of the organs of the mind; but to what are those of the spinal cord subservient? There is a remarkable circumstance connected with the spinal marrow of the frog. Posterior to the point at which the tenth spinal nerve is given off it retains half its original size, extending through the remaining vertebræ and the anterior third of the long caudal bone, and in this course gives rise to three nervous filaments, which are scarcely visible to the naked eye.

Here then is a portion of the cord which evidently belongs to the central organ, and does not stand in immediate relation to the peripheral distribution of its nerves. It would be desirable to ascertain whether the fibres of the spinal cord— as well those which are continued into its nerves as those peculiar to it as a nervous centre—are continuous with those of the cerebrum. It is satisfactorily proved that many motory functions, as, for instance, the act of swallowing, depend on the spinal cord, and not on the brain; and it is, therefore, in some measure probable that such fibres take their origin in the former and not in the sensorium.

The results of the author's investigation of the mode of origin of the spinal nerves are interesting, but require corroboration. He says "The ganglia, through which the union of both nerves (the sensitive and motor) is effected, do not belong so entirely to the sensitive root as in the mammalia. In the fourth spinal nerve, the ganglion appears to be equally divided between the two roots. In the fifth, although the motor branch passes by the side of the ganglion, still examination with the microscope convinces me that some of its filaments pass through it. The tenth nerve has only one root, which is furnished with a ganglion at its point of exit from the canal. The sympathetic nerve unites with the anterior branches of all the spinal nerves excepting the first, which performs the function of the hypoglossus. It forms a double ganglial cord, closely approximating in the cervical region, and diverging towards its abdominal end, so as at last to be connected with the spinal nerves by long and slender filaments."

The author here gives a minute account of the precise mode of union between the individual ganglia and the spinal nerves; of this, however, we must be content to give a summary.

1. The sympathetic nerve consists of two kinds of filaments. One set of these belongs peculiarly to it, and may be named sympathetic in the strictest sense; the other takes its origin in the spinal cord, and may be termed the medullary fibres of the sympathetic. It is universally found that those spinal nerves which unite with the sympathetic are much thicker towards their origin than in the contrary direction; therefore, since it is not at all probable that the central organs receive so large a number of sympathetic fibres, it remains to be assumed that they are the filaments which spring from the central organs, and serve to communicate the influence exercised by the brain and spinal marrow upon the organs of vegetative life.

2. The sympatheticus increases the dimensions of all the spinal nerves, except the first, in joining them in the direction of their peripheral extremity. The first nerve, corresponding to the hypoglossus, is distributed to the tongue, which organ likewise receives branches from the vagus nerve, and this contains a considerable proportion of sympathetic filaments.

3. It is probable, from the mode of union of the ganglia with the spinal nerves, that filaments from various parts of the latter pervade the ganglionic system throughout its whole extent.

4. The superior part of the spinal cord appears to have a greater share in supplying the medullary fibres of the ganglionic system than the lower. The superior connecting branches contain decidedly more of them than the inferior; and the same remark holds good with regard to the ganglia themselves. This circumstance is easily explained, when we consider that the heart, stomach, and lungs receive their nerves from this quarter; for no other organs depending principally on the sympatheticus, are placed in so close a connexion as these with the central organs.

The author has convinced himself, by means of the microscopical investigation of each individual point of union that the sympathetic nerve joins the anterior roots of the spinal nerves, and strengthens them in their peripheral direction. It is probable that the posterior roots also receive some filaments; it is, however, difficult to decide this point. The physiological importance of this fact led Dr. V. to extend his observations to the mammalia, and he had the satisfaction to find it confirmed in the rat and mole.

It only remains, now, to describe the ganglia; they all possess a bright yellow colour in the frog, and contain three elementary forms of tissue, viz. globules, filaments, and cellular tissue. This has reference to the ganglia of the spinal nerves, as well as to those of the sympatheticus. They are regularly formed, more round than oval, and only once was a globule observed that seemed to indicate a capsular arrangement with flocculent contents. Their diameter is from 0·00120 to 0·00184 inch.

These ganglia present, likewise, here and there, yellow patches, which appear to be colouring matter. Dr. V. has never been able to discover any organization in this, and is inclined, therefore, to consider it to be fluid. In some cases it appeared that the globules themselves contained the colouring matter, which appeared in the form of dots on their surface.

" The filaments in both sorts of ganglia possess the following characters in common : 1. They form bundles in their passage through the ganglia, which are easily torn in a longitudinal direction. They are not easily torn across, but can be pursued as single filaments through a considerable extent. These circumstances seem to indicate that they do not lose their neurilema. 2. I have never found varicose fibres in them, although I have so frequently investigated them. 3. Nor have I ever perceived anastomosis or subdivision of the primitive filaments. 4. If a ganglion be dissected with care, it will be often found that fasciculi of these filaments traverse it, entering from a nervous branch on the one side, and passing out on the other into a different one. In cases where a ganglion stands connected with many branches, an individual branch may be found entering on one side, and, upon leaving it, distributing itself to some or all of those remaining. The filaments never terminate in the globules, nor do they pass through but between them; neither have I ever found that the globules are surrounded or inclosed by them; they rather appear to lie between the globules in distinct fasciculi; and, indeed, the proportion of globules is sometimes very inconsiderable, whilst here and there considerable accumulations of globules may be observed, without any filaments running between them. From these irregularities it is questionable whether the globules really consist of nervous matter. These globules are likewise met with in the sympathetic nerves."   *Müller's Archiv.* 3 Heft. 1838.

Case of Anæsthesia (*Loss of Sensation,*) in the course of distribution of the *Fifth Nerve, with Remarks.* By Dr. ROMBERG.

[THIS paper is a valuable contribution to the diagnosis of nervous diseases. Its author has for many years been occupied with similar investigations; and those who have studied at the University of Berlin know how to estimate the industry and affability which so eminently characterize him. If we are not misinformed, Dr. R. has recently been elevated to the professorial chair, so that it is to be hoped that the extended sphere now opened to him will not be without good effects]

It is well known how few have been the instances of pathological conditions of the fifth nerve which have been recorded, compared with the numberless cases of affections of the N. facialis, since Sir C. Bell's work has given to this branch of pathology so much interest. It must be admitted, however, that diseases of the fifth pair furnish more satisfactory evidence of the real nature of their function than can be obtained by means of vivisections. The following is a case of interest, both with regard to the physiological character of this nerve and the diagnosis of its abnormal conditions :

A widow, aged forty-two, fell down stairs backwards, and received a violent blow

on the occiput. A twelvemonth afterwards her catamenia ceased. From this time she was subject to attacks of sneezing, which increased so much, both in violence and duration, that the slightest circumstance provoked the convulsions, and her sleep was continually disturbed by them. The examination of the nostrils afforded no clue to the cause of this condition, and I, therefore, sought to account for it in the injury done to the head, implicating, possibly, the nasal filaments of the fifth nerve. On investigating the regions to which the first and second branches of the fifth are distributed, I found the sensibility undiminished, but upon arriving at the region of the third branch, I found complete anæsthesia in its whole extent. I will here detail the symptoms, as I have repeatedly demonstrated them to my pupils, and likewise in the presence of Prof. Müller and other friends. I always took the precaution of effectually binding the patient's eyes, which I deem to be necessary in such investigations, in order to guard as much against simulation as to prevent the patient being misled by the sight of the instrument used.

The left half of the under lip, both on its external and internal surface, and the left half of the chin did not betray the least sensibility on being pricked with a sharp vaccinating needle; this was likewise the case with the left ear and the meatus externus. The same parts were insensible to the flame of a taper. The insensibility extended upwards to the left temple, bordering on the hairy scalp, and including the tongue also. There was no pain caused by pricking, nor was there perception of heat or cold on the side, point, or surface of the tongue on this side.

On the right side of the head all these parts were in full possession of their sensibility, and indeed all the other sensitive nerves of the left side preserved their integrity, so that the limits of the distribution of the third branch of the fifth could be accurately marked out by means of pricking the skin. If the needle came in contact with the skin of the temples towards the forehead, the patient gave immediate signs of pain, from the presence of branches of the frontalis: the same result ensued on injuring the integuments covering the horizontal portion of the lower jaw, from the presence of the subcutaneous branches of the third cervical nerve.

Besides the loss of sensation, with reference both to heat and cold and mechanical injury, which the tongue displayed, I found that the sense of taste was obliterated. No kind of substance, fluid or solid, bitter or otherwise, produced the least impression on the left side, whilst on the right, they were discriminated with precision. I tried this experiment with various substances, as colocynth, various salts, acids, &c.

Notwithstanding this partial disturbance of the sensibility of the left side of the face, nothing of the sort existed in the motory function. Neither the expressive or mimical (mimische), nor the respiratory or masticatory motions were impaired. The same was the case with the masticatory and articulatory motions of the tongue. The nutrition of the left side was unimpaired; the dimensions, colour, and moisture of both sides being alike, and blood flowing with the same readiness, and ceasing equally soon on the left side as on the right.

From these premises I drew the following diagnosis: "The anæsthesia which extends throughout the distribution of the third branch of the portio major of the fifth, indicates an isolated affection of this nerve, and, indeed, a compression of its trunk, since the loss of sensibility has been unaccompanied throughout with painful sensation in the parts to which the nerve is distributed. The cause of the existing pressure must include the whole of the primitive filaments belonging to this subdivision of the nerve, and, consequently (in all probability), the trunk of the nerve itself, for there is an entire absence of sensibility in all the organs supplied by it; and, on the other hand, the immunity of the parts supplied by the remaining two branches of the fifth, prove that the pressure cannot be situated in the Gasserian ganglion, else there would be more or less implication of other parts in the anæsthesia; neither can the seat of pressure be external to the foramen ovale of the sphenoid bone; for from this point the motor and sensitive fibres of the third branch are in such close juxtaposition, that it would be impossible that one class of functions should be so completely annihilated and the

other be left unimpaired, (it will be remembered that the masticatory motion of the left side was not weakened.)   I am, therefore, led to assume the presence of a tumour, either of the dura mater or of the bone, so situated as to cause pressure on the third branch of the fifth nerve, previous to its passage out of the foramen ovale."

On the 19th March, the patient died of dropsy, and the body was brought for examination to the Anatomical Theatre in Berlin.   Previous to the section, I repeated my diagnosis to those present, viz., Prof. Müller and Drs. Henle, Schwann, and Philipp.

The investigation of the contents of the cranium gave the following result: The surface of the brain was covered with a gelatinous, and more or less white, opaque exudation.   A portion of the brain, of about the size of a walnut, situated on the inferior surface of the posterior lobe of the left hemisphere, and corresponding to the posterior horn of the lateral ventricle, was softened, but without any sign of vascular injection in the neighbourhood.   In other respects both the brain and spinal cord were normal.   The third branch of the fifth nerve, just at its point of entering the foramen ovale, was surrounded by a reddish vascular tissue, consisting partly of fibres and vesicles.   Closer investigation showed it to be an exudation into or hypertrophy (Wucherung) of the neurilema, passing into the dura mater, in the direction of the origin of the nerve, and becoming gradually lost upon the neurilema, inclosing the nerve after its passage through the foramen ovale.   The neurilema was thickened, and reddish throughout that portion which lies in the sphenoid bone, but becoming less so as it approached the spot where the ganglion oticum lies in contact with it.   As far as the neurilema was altered in appearance, the nerve appeared to be thicker and firmer, and to possess a slight yellow colour.   The third branch of the Gasserian ganglion was the only portion of the nerve that had suffered any alteration.   The motor branch lay to the inside of the nerve, and joined it below the spot described.   All the nerves supplying the buccinator, pterygoid, and temporal muscles were normal, as likewise those of the tongue and lower jaw, the quintus of the right side, and the glosso-pharyngeal nerve of both sides.

REMARKS.   These observations could not have been made at a more opportune season than the present, when the controversy concerning the gustatory nerve engages so much the attention of physiologists.   I think I shall not be presuming too much, if I consider this case as conclusive evidence of the truth of the theory which maintains that real gustatory fibres are at least contained within this branch.

I express myself thus in order to avoid the general but erroneous view, that this nerve is an aggregate of homogeneous filaments; for this case incontestibly proves that sensitive and gustatory elements are included in it.   Pathological facts are in this case of infinitely more value than experiments on animals; and this is true of all the perceptions of sense.   In the experiments respecting the participation of the glosso-pharyngeus and lingualis in the sense of taste, neglect of this consideration led to erroneous conclusions.   The sensitive functions of the tongue were limited to those of mere sensation and taste; and a third, one of considerable importance, was overlooked, although it is one that the most simple experiment may serve to establish.   For instance, if the finger be passed over the point, edge, or middle of the tongue, nothing but ordinary sensation is excited; but as soon as we approach the papillæ vallatæ and the root of the tongue, the feeling of nausea is excited together with a sense of choking, a decided reflex action.   It is in these papillæ, and also in the velum and other parts which when irritated give rise to the same sensations, that the filaments of the nervus glosso-pharyngeus[*] are distributed.   In most of the experiments made upon animals with reference to this circumstance,[†] it is stated that nausea and strangulation

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[*] The author terms the nerves frequently "*via*," thus, "via glosso-pharyngea" instead of nervus glosso-pharyngeus.   His object is to avoid the apparent confounding several distinct kinds of filaments together, under a term which implies uniformity.— TRANS.

[†] See Panizza and Valentin; Repert. für Anatomie u. Physiol. 1837. 2 Bd. 2 Abthl. S. 220.

were excited in cases where the glosso-pharyngeus was uninjured; but I think it was incorrect to ascribe their production to the influence of taste. I consider that the greater abundance of the papillæ vallatæ has reference, in animals, to the instinct possessed by them, inasmuch as I consider the sensation of nausea, &c., to be of more importance in enabling them to discriminate between noxious and innocuous food than mere taste. The observations of Rudolph Wagner* seem to strengthen this opinion, for he shows that papillæ vallatæ appear to have constant reference to the alimentary instinct of the different mammalia in their form, number, size, and situation. I need not observe that I differ from him in attributing the function of taste to the glosso-pharyngeus.

From the reasons above stated, I do not hesitate in terming the glosso-pharyngeus *the nerve of alimentary instinct.* This, too, explains its uniform presence in all classes of animals, whilst the lingualis is wanting in birds.

Besides the specific sensitive function of the glosso-pharyngeus, its peculiar reflex action, above alluded to, is very deserving of attention. It is exceedingly interesting to observe how different are the reflex functions peculiar to contiguous organs, even when produced by the same stimulus. The irritation of the vagus in the glottis produces cough; in the fauces, the same nerve being irritated, excites the act of swallowing; the glosso-pharyngeus causes the phenomena we have described. A very instructive instance of this variety of reflex action is given by Marshall Hall, (Lectures, &c. p. 23,) where a person introduced a feather into the mouth in order to cause vomiting, by irritating the fauces, but passing it too far it became subject to the peculiar action of the œsophagus, and was drawn into the stomach, These reflex actions may be made use of as reagents in the investigation of the offices of sensible nerves; and as I lately found, whilst experimenting upon a horse, that irritation of the nervus vagus in the neck caused cough, so the irritation of the glosso-pharyngeus would, I doubt not, in all cases produce the sensation of choking.

The next important commentary that this case affords is the elucidation of the law of *isolated conduction* (isolirte Leitung) and *co-sensation.* The first of these laws ensured the accuracy of the diagnosis, whilst the latter offers an explanation of the convulsive sneezing. For we can best comprehend the connexion of the cause and effect, by supposing that this peculiar convulsive sneezing was produced through the radiation of the sensation, and transference of the irritation of the filaments of the third branch, to the nasal filaments of the first, (whether in the ganglion Gasseri or within the central organ I will not decide,) and by means of the reflex respiratory motion. The co-sensation in the cerebral end of the nasal twigs was so acute and the tension so considerable, that any the least stimulus gave rise to the sternutatory action, so that my experiments on the sensation of the face was often interrupted thereby.

We have hitherto only considered the case in its physiological characters, but it teems likewise in points of pathological interest; particularly of course with reference to the fifth pair of nerves, concerning which we know as yet so little.

In the hyperæsthesia of this nerve (tic douloureux), the confusion and unintelligibility of the writings on the subject afford sufficiently convincing proof how little is known respecting it, and the paralysis of the fifth was a complete terra incognita, first discovered by the genius of Bell. Since that time some few cases have been published, which serve to throw a brighter light upon the subject. The paralysis affects either the sensible or motor branches, or both at once. Simple means suffice to establish this. Further, it must have either a peripheral or central origin; and here I would observe, that the former has a more extended sphere than is usually ascribed to it. It has been a common error in pathology to view the aggregate of nervous fibres, as they leave the basis of the brain as the nervous root or origin of the nerve, and, consequently, to include their diseases, whilst in this part of their course, under the head of affections of the central organs. But a nerve must be considered as peripheral in every portion of it, from its earliest

* Neue Notizen aus dem Gebiete der Natur u. Heilk. No. 75.

origin to its remote termination. Thus, the paralysis of the fifth is peripheral, whether its inducing cause be seated in the surface of the face, in the sphenoid bone, the ganglion Gasseri, or in the neighbourhood of the pons varolii. The real locality of the affected portion may be determined diagnostically. The more isolated the anæsthesia, the more peripheral is the cause.

Thus, when caused by the extraction of a molar tooth, the anæsthesia was confined to half of the lower lip, as in other cases it is limited to the alæ nasi or the surface of the eye, &c. We may thus pursue diseases of the nerve in its course, until the loss of sensibility of the entire surface of the face supplied by it, combined with paralysis of the masticatory muscles, indicates an affection either of the ganglion Gasseri or the parts in its immediate neighbourhood. In cases where the ganglion is affected, another class of symptoms makes its appearance, possessing considerable physiological interest, viz., disturbance of the vegetative functions in the parts which are at the same time deprived of their sensation; this produces in the eye inflammation, suppuration, and ulceration; in the nasal and oral cavities redness, and hemorrhage, and wasting of the gums. Such instances have been observed by Serres and Abercrombie.*

Müller's Archiv. 3 Heft. 1838.

On Transfusion of Blood. By Professor Th. Bischoff, of Heidelberg.

Dr. B. communicates some very interesting remarks on this subject. He had formerly published his confirmation of the experience of Prévost, Dumas, and Dieffenbach, to the effect that fresh and unagitated blood procured from any of the mammalia, caused instantaneous death upon being injected into the veins of a bird. Upon repeating this experiment in his class, in the course of this and the previous summer, he was much astonished at not finding the usual fatal result to occur. In vain did he attempt to explain the cause of the disappointment, until it occurred to him whether, perhaps, there may be a difference in the effect of venous and arterial blood. In his former and latter experiments, he had taken a cat, rabbit, or young dog, and obtained blood from it by cutting its throat. It was therefore possible, that at different times the syringe had taken up different kinds of blood. To decide this, the following experiments were performed: In one leg of a dog the vena cruralis was exposed, and the arteria cruralis in the other. First, some blood was taken from the vein, and about a drachm was injected into the left jugular vein of a healthy cock. The bird died in a few seconds, under the most violent convulsions. A portion of blood from the artery of the other leg was then injected into the corresponding vein of a hen. The bird was powerfully affected by it, but the experiment did not prove fatal; in a short time it had recovered itself, and a small quantity of venous blood was injected, upon which the fowl died immediately. Precisely similar experiments were tried some time afterwards, and with the same results; here a few drops only of the venous blood proved fatal. A strong goose, also, bore the injection of arterial blood, but venous blood caused the most violent convulsions and death. What could be the cause of this remarkable difference? In order to avoid the possibility of other causes operating, every precaution was adopted. Thus, in order to prevent the possibility of plethora, a small quantity of blood was allowed to escape first; due care was also taken to avoid the injection of air into the veins, which however is by no means always attended with fatal consequences. There is then no doubt left, in the opinion of Dr. B., that it is the venous blood which exercises the fatal influence; how it acts, is a question which remains to be solved; and its solution will no doubt prove of service in increasing our knowledge of the differences between venous and arterial blood.	*Müller's Archiv.* 4 *Heft.* 1838.

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* Diseases of the Brain, p. 424. Last Edition.

On the Temperature of the Vagina and Uterus before and during Menstruation,
and of the Vagina during Pregnancy. By J. C. G. FRICKE, Hamburg.

THIS paper contains an account of thirty-four experiments made on twenty-four
women. The thermometer (Reaumur's) used in examining the vagina was bent
at a right angle, and introduced as deep as possible into the vagina, the labia
being closed on it; that for the uterus had a very fine and longish bulb, which was
introduced from four lines to half an inch into the uterus. The speculum employed
was previously warmed. The experiments were made between ten and eleven, A.M.
The following conclusions are deducible from the whole observations: 1. That
the temperature of the external air affects the axilla, but not the internal parts.
2. That the vagina is always warmer than the axilla and uterus; but that the uterus
is warmer than the axilla.   3. That both menstruation and pregnancy have little
or no effect on the temperature of the vagina.

Zeitschrift, f. d. g. H.   Hamburg, Nov. 1838.

MEDICINE.

Camphor, a Panacea. By M. RASPAIL.

IF physicians will only fairly try these new modes of smoking and sneezing out
diseases, M. Raspail assures us that—we shall be astonished.

Let every man (says he) get a double-bottomed box, one part of which is to
contain powdered camphor, the other camphor cigars, and thus he may walk
through this dirty world without being defiled; and if he be defiled already, he
will promptly be made clean.   If a believer in camphor only take the precaution
to place a lump of it on the pit of his stomach, the powder of it in his ears, the
snuff of it in his nose, and the smoke of it in his mouth, he may walk through the
hospitals with pleasure, he may investigate the plague in security, and instead of
imbibing the miasma of infection, he will diffuse the odour of health.   M. Raspail
assures us that he has smoked camphor now for three months, and that whenever
he leaves it off he becomes sensible of some inconvenience.   M. Raspail does *not*
inform us how many suffer no inconvenience who have smoked no camphor.   But
M. Raspail presses for a fair trial; we give, therefore, a brief description of his
apparatus, and add the names of those maladies which he has successfully treated.

1st.   The camphor made into impalpable powder forms the snuff.

2d.   The cigars are made by stuffing pieces of straw, or crow-quills, with small
lumps of camphor, and stopping the ends with (papier joseph) blotting paper.
These cigars, however, are to be smoked *cold,* i. e. the air is to be sucked through
them impregnated by the camphor; and the saliva is to be swallowed.

3d.   Pieces of linen soaked in a saturated solution of camphor in alcohol, and
covered by Indian-rubber cloths, or other skins, or bladders, made impervious to
the air by gum or starch. (p. 12.)

But M. Raspail becomes serious; he prays that "MM. les Médecins" would
believe that he has not exaggerated the effect of his apparatus; and that he has
witnessed a host of evils exorcised by them as by magic,—obstinate diseases, re-
sisting every other treatment.   "I beseech them, therefore," says M. R. "to try
for themselves.   I appeal, not to their memories, but to their consciences; and the
conscience *of the physiologist* is based entirely upon experiment."

M. R. mentions coughs, "rhumes," catarrhs, "grippe," oppression, expectora-
tion, hooping-cough, and croup, as yielding to the camphor cigar and snuff.   He
has no doubt, too, of its salutary effect upon the first stage of phthisis pulmonalis;
also, the affections of the stomach which have not yielded to antiphlogistic reme-
dies.   In diseases of the abdomen, the clothes soaked with the saturated solution
are "heroic,"—also in intermittent fevers, enteritis, cholera, and typhoid and
yellow fevers; in diseases of the liver, the spleen, the kidneys, the uterus, &c.
Finally, camphor has proved successful in curing diseases of the ears and eyes; in
removing cutaneous disorders, and arresting the agonies of tooth-ache.

Gazette des Hôpitaux, Nov. 17, 1838.

On the Character and Origin of the Pustula Maligna. By Dr. SCHWABE.

THE pustula maligna appears at first as a small, dark, reddish spot, which is shortly transformed into a small vesicle containing a whitish yellow fluid. The vesicle is at first surrounded by a red shining areola, which soon becomes of a darker colour, and the surrounding cellular tissue becomes indurated. The vesicle now increases in size, and is sometimes as large as a hazel nut; the swelling of the surrounding parts at the same time becomes greater, and the adjacent glands begin to get swollen and painful. Generally about the second or third day, but sometimes within a few hours, the pustule becomes at first of a blue and then of a black colour, and the areola takes on a livid tint. As soon as the pustule breaks, its contents, spreading in all directions, infect the healthy skin, and give rise to new pustules. The skin covering the pustule mortifies, and a black slough is formed, which extends rapidly in all directions, and is tolerably firmly connected with the neighbouring healthy parts. The surrounding tumour is now doughy, and the skin immediately around the pustule is hard and leathery. The gangrene affects merely the skin and the subjacent cellular and adipose tissues; the muscles, nerves, and blood-vessels remain healthy.

At first there are no general symptoms; the patient feels a sharp pricking pain, which he ascribes to the sting of an insect, and pays no attention to it. It is only after the areola begins to turn livid, and the surrounding tumour doughy, that the system is attacked. This occurs sometimes in a few hours, sometimes in two or three days. The patient becomes feverish, the pulse is hard and quick; the respiration difficult; there is great prostration of strength, nausea, sleeplessness, and delirium. The pulse soon becomes small, frequent, and intermitting; and is at last scarcely perceptible. The delirium becomes constant, and there is great restlessness and utter prostration. The tongue and lips are covered with dry dark crusts; the fæces are dark coloured and very offensive, and death ensues in from four to seven days from the commencement of the affection, with all the symptoms of a putrid typhus.

Dr. Schwabe believes that the disease is produced by the contagion of glanders, applied in most instances by insects. He has observed, that the patients in general complained of a momentary prick, as if by the sting of an insect, on the spot where the pustule afterwards appeared; that they were in the open air at the time, and that the pustules never appeared where the body was protected by the dress. In six cases, too, which occurred to him, none of the patients had come in contact with diseased cattle, nor had any of them partaken of newly-slaughtered flesh for several days previous.

Dr. S. has never seen the disease propagated from one individual to another, although, in two cases which came under his notice, the children slept with the affected parent.

The treatment which Dr. S. recommends, is the local application of muriatic acid till a line of demarcation forms, and the gangrenous mass be thrown off.

Casper's Wochenshrift. Nov. 13, 1838.

On the Treatment of Quinsy by Scarification. By M. GÉRARDIN.

M. VELPEAU, in his "Traité d'Anatomie Chirurgicale," distinguishes two species of inflammation in the tonsils, one limited to the mucous membrane, the other situated in the submucous cellular tissue. It is important to recognize these two different seats of the disease. The examination of the throat will be sufficient to determine whether the mucous tissue or the cellular be attacked; and this diagnosis is indispensable, since the treatment which may prove successful in the one case would be detrimental in the other. Perhaps it is to the want of this distinction, that the experience of one practitioner has been contradicted by another: for instance, in the use of alum gargles; which have proved advantageous in the mucous inflammations, but have increased the pain and inflammatory symptoms in the parenchymatous disease.

The application of leeches to the submaxillary region occasions often a local subcutaneous effusion in the neighbourhood of the inflamed tonsils; and it is to be lamented that this remedy should still be the common routine prescription with the generality of practitioners; for the physician is often called in only after one or two applications of leeches have preceded him. In every quinsy, whether mucous or parenchymatous, if the state of the subject be plethoric, I first bleed from the arm, and some minutes afterwards I proceed to scarify the inflamed parts. It is rarely necessary to recur to this operation more than twice. In the most intense parenchymatous quinsies the disease yields to two scarifications made within twelve or twenty-four hours of each other. The swelling subsides directly, the patient feels great relief, which he does not fail to express. The scarifications are to be made more or less deep, according to the seat of the inflammation; if the cynanche is mucous, I slightly scarify all the parts reddened by the inflammation, the tonsils, the palate, and the uvula: if the disease is parenchymatous, I make deeper scarifications, particularly in the tonsils. I puncture the surface as long as the flowing blood will permit me to see; and, after it has cleared away, as the operation is not painful, I complete the scarifications on the untouched parts. In the parenchymatous quinsy, twelve or fifteen punctures will afford a sufficient bleeding. Under the influence of the scarifications, the resolution of the inflammation is prompt and invariable, and takes place almost always the day after the operation. After some time, there will be observed small white lines—the cicatrices of the punctures. I know of no objections to this practice, but the difficulty of getting at the seat of the disease, or when the intensity of the inflammation prevents the opening of the jaws. Boyer speaks strongly of scarifications in cynanche tonsillaris, but only as an occasional operation. It is remarkable that he should not have recommended them more generally, after using these words: " by scarification the alarming progress of the symptoms is arrested, and a prompt relief is given to the state of anxiety under which the patient labours." I scarify at the commencement of the inflammation, or at its height, according to the time of my arrival.

I have also recourse to scarifications in laryngitis and pharyngitis, and always with the greatest success. They are certainly more efficacious than cupping, and avoid the marks in the neck.

Bulletin de l'Academie Royale de Médecine. Tom. cxi. No. 1. 1838.

Case of Fatal Inflammation of the Vermiform Process. By Dr. BIESKE.

L. H. aged twenty, tall, but of robust constitution, and previously in the enjoyment of good health, complained of being sick and uncomfortable on the evening of the 2d September. In the early part of the day he had been in excellent spirits, and had taken a hearty dinner. On the 3d he complained of want of appetite, weariness, pains in the limbs, and a slight pain in a circumscribed spot, of about three inches in diameter, in the right iliac region, which was somewhat increased by pressure. The tongue was coated, and the pulse rather frequent. The disease was considered as a slight febrile attack, eight leeches were applied to the painful part, and a dose of acetate of potash given internally. In the evening the pain was removed, and the patient appeared to be doing well. An emulsion of castor oil with laurel water was given to open the bowels. The condition of the patient remained much the same during the 4th; on the 5th he was more restless, and complained of a return of the pain in the side, which was again removed by the application of leeches. In the evening there were still no unfavorable symptoms, but on the morning of the 6th matters had assumed a different aspect; the pulse could scarcely be counted, was small, hard, and wiry, the abdomen tense and tympanitic, but not painful; the face collapsed, and the extremities cold. The patient was immediately bled, but his weakness prevented more than two cups of blood being taken. In spite of a variety of remedies, his state went on from bad to worse, and he expired at one o'clock on the morning of the 7th.

On dissection, the processus vermiformis was found in a state of mortification,

and a concretion, about the size of a large coffee berry, the probable cause of the disease, was found impacted in it. A section of the concretion showed its nucleus to be formed by the stone of a grape.

Rust's Magazin für die gesammte Heilkunde. Vol. lii. Part 2.

On the Local Employment of Mercury in the Treatment of Variolous Eruptions. By M. Briquet, Physician to the Hôpital Cochin.

The chief object of this paper is to point out the great advantages derived from the application of mercurial plasters (Emplâtre de Vigo) in the treatment of all the varieties of small-pox, whether simple, confluent, or modified. The effect of these plasters is, in general, either to prevent the development of the pustules, or so to modify them that they become mere abortions, and very slightly affect the skin. M. Briquet details several cases which support him in his opinion that mercury, locally applied, exercises great influence on the course and nature of the eruption. By the application of the plasters the exanthema either undergoes complete resolution, or it is converted into vesicles or tubercles. The resolution is either primitive or secondary. The former takes place when the plaster has been applied whilst the eruption is still papular, and its effect is the complete disappearance of a number of papulæ, which, without the application of the plaster, would have passed into pustules. This diminution of number, as ascertained by counting the number of papulæ before and after the application of the plaster, varies from a third to a tenth of the whole number. Secondary resolution ensues, when the papulæ, after being covered by the plaster, increase in size for two days, and then pass into resolution. But the most general effect of the plasters is to produce conversion of the eruption into a vesicular or tubercular form. The vesicular is the more common, and in such cases the eruption bears considerable resemblance to herpes, or to vesicles which have been developed under a cataplasm. The vesicles, when they have reached their maximum development, contain a milky fluid; their walls are formed by an epidermis extremely thin, and not at all tense, and their base is sometimes surrounded by a slight areola of a pale rose colour. They vary in size; the smallest are not larger than the point of a pin, the largest equal a millet-seed. The skin between the individual vesicles is pale and white, and never red and swollen as in pustular small-pox.

The slightest friction destroys the epidermis of the vesicles, and their base then appears as a moist, slightly red surface, which, on the day after the removal of the plaster, has already become dry and covered by a delicate epidermis. No scales are ever formed on this surface. In no case has M. Briquet ever seen a permanent cicatrix formed, except in one which was treated by M. Nonat, and in which there were a number of very minute cicatrices, but still widely different from the deep marks of common small-pox. In this case M. Briquet doubts whether the plaster had been rightly applied.

In order that the plasters may have the effect of modifying the eruption, they must be applied before it has become pustular; when applied later than the fifth day, they do not appear to exert any beneficial influence.

The conversion into tubercles is more rare, and generally takes place in cases of confluent small-pox. They harden and desquamate, soon after removal of the plaster, without leaving any permanent cicatrix.

The plaster is best applied spread upon some coarse stuff, stiff enough to support itself, and thus remain in exact contact with the skin. A little mercurial ointment is applied to the eyelids and nostrils, as the plaster cannot readily be kept upon these parts. The plaster is allowed to remain for three days in simple small-pox, and a day longer in confluent cases. No benefit is derived from a longer application, but rather the reverse, as softening of the base of the vesicles may ensue in consequence, and cicatrices be formed.

When the plasters are allowed to remain too long, a slight erysipelas may be the consequence, but this is extremely rare. In two cases an eruption resembling measles followed the application of the plasters, but it did not appear certain that

it was in consequence of them. A slight eczema is sometimes produced by the plasters, but its extent is always very limited, and it is of little consequence. In no case was any deleterious effect produced by thus modifying the eruption, but the advantages appear to be many. The inflammation that would otherwise have ensued in confluent cases was obviated, and the brain thus in all probability prevented from being affected.

The mercury seems to be the chief agent in effecting the modification. Pressure did not produce the same effects, for the pustules were developed as fully below adhesive plaster as upon the free surface of the skin. Neither have the plasters of lead any effect in changing the nature of the eruption; but the modification is produced by mercurial ointment spread upon the surface, equally well, if not better than by the mercurial plaster.

Archives Générales de Médecine. Octobre, 1838.

On the Origin, Growth, and Termination of Pulmonary Tubercle.
By Professor A. A. SEBASTIAN.

IF pulmonary tubercles were, as some writers maintain, formed in the cellular tissue of the organ, they would, without doubt, most frequently be found in that separating the lobules and lobes, yet there I have never been able to discover them. Hence, though not perfectly convinced of the fact, I am inclined to place the seat of tubercle in the pulmonary cells. The process of injecting the bronchi throws no light on the question, for though I never detected the mercury I had injected by those tubes in the tubercles, the fact of its not having entered them may be accounted for either by the cells being completely stuffed with tubercular matter, or by the pressure exercised on the cells by other tubercles, possibly formed in the cellular membrane. The smallest tubercles I have seen were certainly larger than the pulmonary cells, the diameter of which, according to Weber, equals from 0·053 to 0·16 of a Paris line. With respect to the connexion of tubercle and hydatid in the lower animals, Kuhn has shown that, besides the cyst proper to the hydatid and the external cyst, consisting of plastic lymph, it is produced through the irritation o. the foreign body. Once formed this external cyst secretes a yellow, soft substance, full of calcareous principles. In proportion as it increases in quantity, this yellow or tuberculous substance presses the acephalocyst to such an extent, that in the end a mere vestige of it is only to be found imbedded in the yellow matter. It does not appear probable that human tubercles originate in an hydatid, for those of the lungs and exterior surface of the peritoneum are not invested by a cyst. If such were the mode of formation of that product in men, hydatids would be met with frequently in conjunction with it; now, I have never by the closest scrutiny succeeded in discovering cysts and tubercles together. Again, with respect to the primary form of the morbid deposit under consideration, Professor Carswell does not appear to have proved that the formation of the semi-transparent substance really precedes that of acknowledged tubercle. The production of that matter in the instances described might have been the result of irritation caused by the presence of tubercles in neighbouring parts. So, as regards the peritoneum, in his theory, any given tubercle might have existed before the plastic lymph thrown out through the irritation of other and neighbouring tubercles. And this mode of viewing the question acquires greater weight from the observation of the Professor himself, that the semi-transparent matter does not always exist. Tubercle, in its very earliest stage, always appeared to me in the form of a minute white cloud placed in healthy parenchyma and imperfectly circumscribed, at least not round. Possibly this cloudy appearance is cadaveric, and the matter has been pellucid during life; in this case in order to become a tubercle it must have acquired opacity before death. I have besides frequently observed points growing from these minute clouds and ascertained that in process of time they enlarge, or rather that several of them coalesce and by their union form the *miliary tubercles* of Laennec; these last I therefore believe to be true tubercles. According to Schroeder Van Der Kolk and Dr. Carswell, the form of tubercles depends on the

structure of the lung. I conceive, however, that it is in some measure influenced by the nature of the tuberculous substance itself. For in proportion as the tubercle increases in size, the cellular membrane gives way before it, and hence it is that the form of larger tubercles is nearly the same in every organ. I do not understand how the resistance offered by the tissue of organs can, as Dr. Carswell supposes, increase the hardness of tubercles. Murdoch states that those occasionally met with in the medullary substance of the brain are harder than those of other organs. According to Dr. Alexander Thompson,* tubercles are not destitute of organization and really contain vessels. This uncommon notion appears to me to be explicable by the fact that tuberculous matter is sometimes deposited round a small artery or vein, so that upon injection of the pulmonary vessels a branch appears in the midst of the tubercle. But no ramusculi can be detected given off from that branch to the tubercle itself, and the large size of the branch, too, is enough to show that it could not belong to that body. I have in my possession several fragments of lung in which a small tubercle is seen in the midst of well injected pulmonary tissue in such manner that the red material used for the injection of the artery, the blue for that of the vein, and the white for that of the bronchi, immediately invest the tubercle. Whence, I conclude, that no argument can be drawn from the condition of the parts surrounding the smallest tubercles in support of their inflammatory origin. I do not, indeed, affirm that the adjacent tissue is healthy, but I contend that it presents no manifest and visible signs of any morbid state. Again, I have never seen hepatization immediately around minute tubercles. Nor can I omit, what appears to me of the last importance in this matter, namely, that tubercles cease to be formed in the substance of the lungs when once it has commenced to exhibit manifest signs of inflammation round those bodies in the crude state.   *Tijdschrift v. N. Gesched.* ii. d. 3 st.

SURGERY.

On the Varieties and Treatment of Fractures of the Ribs.
By J. F. MALGAIGNE.

[THE name of Malgaigne, attached to any essay, the subject of which is fracture or disturbance of bone, is sufficient to call attention to it. The author of the communication which affords the materials for the following analysis, has studied the subject in a comprehensive and scientific manner; and we doubt not that there is in the present paper not a little that will be novel and interesting to many of our readers.]

From a review of our knowledge on the subject of fractures of the ribs, M. Malgaigne concludes that the clinical and experimental history of this affection is still a desideratum; all which is at present taught in the schools being unsupported by anything like proof. The author says that his attempt will be to supply the necessary information; for which purpose he has studied the normal figure of the ribs, he has instituted experiments upon the corpse, has collected cases from the living, has procured pathological specimens, and has gathered from books such information as was available for his object.

Causes of fractures of the ribs. External causes. The opinion generally maintained, that fracture of a rib takes place *almost always towards the middle of the rib,* is stated to be incorrect. M. Malgaigne says that the majority of such fractures are seated in the anterior half of the rib. Direct causes may produce their effects on all parts; but the anterior parts are the most exposed to their action, the posterior portions being protected by muscles and by the scapula; the middle, by the arm and the shoulder. And with respect to indirect causes, M. Malgaigne has very often tried to break the ribs by a sudden and forcible pressure on the sternum, but the fracture has always been in the anterior half, and generally

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* London Medical and Surgical Journal; December, 1835.

nearer to the sternum than to the middle of the ribs.   Several reasons may be given why this should be the case.   The posterior extremities of these bones being more elevated than the anterior, if, for example, the heel is pressed upon the sternum, on a level with the insertion of the sixth rib, the pressure corresponds posteriorly almost with the level of the tenth rib.   The first effect of the pressure upon the anterior extremity of the rib is to force it backwards and downwards simultaneously; that is to say, to diminish in one direction, but to increase in another, the interval which separates the extremities of the bone.   When fracture takes place, therefore, it is not in consequence of simple increase of the curve, but because of the twisting which results from the depression of the anterior extremity. As this movement takes place especially in this extremity, it is quite natural that it should more particularly suffer.   Again, the anterior pressure acts upon the sternum beyond the anterior extremity of the rib, prolonging the arch in this direction; but the posterior pressure acts particularly on that part of the bone which is just anterior to the angle, and which projects so much behind, that the body rests upon it in decubitus.   Now, these two circumstances explain why the centre of the arch, the curve of which is increased by the fracturing force, is much anterior to the centre of the bone.   And, lastly, anatomy indicates and experience reveals another reason of the fact above stated.   Pressure does not act on all the ribs simultaneously; and those which are not pressed upon, supporting the others, prevent them from yielding as much as if they were isolated.   Thus, for example, press with the hand upon the sternum, on a level with the sixth rib; the sternum sinks, and, at the same time, approaches the vertebræ.   But, increase the pressure, the bone does not sink any further, and its superior extremity, held firmly by the ribs, remains almost immoveable, whilst the inferior is pressed towards the vertebræ.   The ribs follow this movement unequally; the sixth rib, being more directly subjected to pressure, bends more; the seventh and the fifth, somewhat less, and so on.   So that the point at which flexion commences varies with each rib, and, consequently, cannot be always the centre of the arch which they describe; and, lastly, this point of flexion cannot be very far separated from the sternum, because of the resistance of the neighbouring ribs.   From this binding together of the ribs when they resist pressure on the sternum, it happens that in almost every case several ribs are simultaneously fractured, when the cause of such fracture is indirect; and, on the other hand, as these fractures always take place in the anterior half of these bones, a series of fractured ribs in the vicinity of the sternum, excepting where they may have been caused by the wheel of a carriage passing over the ribs themselves, are almost inevitably dependent on an indirect cause. Many individuals suffered fractures of the ribs in an enormous crowd, assembled on the Champ de Mars, in 1837.   Of twenty-three who died, seven had fractured ribs.   The number of ribs which were broken varied from two to thirteen in the same individual; and all the fractures were anterior, and between one inch and a half and two inches and a half from their cartilages.   But a single rib may be broken by an indirect cause; in which case the pressure has acted solely upon the cartilage, or upon the extremity of this rib.

With regard to the *internal causes* of fracture of the ribs, we can here only allude to several cases, which M. Malgaigne has collected, of fracture taking place during cough, in cases where there does not appear to have been any peculiar fragility of bone.   The individuals to whom the accident happened were all, however, somewhat advanced in years.   Drs. Gooch and Graves are alluded to by the author as having published cases of this description.   In a diagnostic point of view, the fact, possibly of less rare occurrence than is supposed, should not be lost sight of.

There are three principal kinds of fractured ribs: 1. *Incomplete fractures.* 2. *Simple fractures.*   3. *Multiple fractures.*

1. *Incomplete fractures.*   These may occupy the inferior or superior half of the bone, or the internal or external surface.   Fractures of the latter kind are simple or multiplied, most generally affecting the internal table, but sometimes the external alone.   Direct or indirect causes produce them, and several ribs are com-

monly affected at the same time. These fractures are so readily produced, either upon the entire corpse, or upon a rib isolated and separated from the soft parts, that it is difficult to resist the inference that incomplete fractures of the ribs are of much more frequent occurrence than we appear justified, from our actual knowledge, in supposing them to be. Two causes may account for our inability to decide this doubt: the negligent mode of diagnosticating fractured rib, and the infrequency of autopsies. But there are cases of incomplete fracture on record, occupying the various situations already mentioned. Such cases are detailed by M. Malgaigne.

2. *Complete simple fractures.* These are either oblique or transverse, the fracture being clean: or they are very irregular, each fractured surface being covered with projecting points and angles.

3. *Multiple fractures.* These fractures, although scarcely recognized, are probably as frequent as the second variety. The double fracture is sometimes incomplete. Complete fracture may be associated with an incomplete fracture, or the fracture may be complete in two situations, or there may be three or even four fractures in the same rib. In the " Musée Dupuytren," two anatomical specimens are preserved, where several ribs are broken together ; in one case, all the fractures are simple ; in the other, they are double. Of nine anatomical specimens, in the possession of M. Malgaigne, five exhibit a consolidated simple fracture ; two present double complete fractures of the same rib, the middle fragment being from three to four inches in length ; one shows the traces of three fractures, the hindermost of which, close to the angle of the rib, appears to have been complete, and the other two, half an inch and four inches anteriorly, are incomplete. In the last specimen are traces of four fractures: one towards the angle of the rib, complete ; a second incomplete, and half an inch more anterior; and others, more anterior still, which appear to have been complete. The callus of complete fractures may be readily distinguished, however small may have been the displacement: it surrounds the rib like a rough and projecting ring; whilst in incomplete fractures the external face (unbroken in all the specimens seen by M. Malgaigne) shows no vestige of bony deposit, and the imperfect ring of callus is only seen on the inner surface or on the borders of the bone.

Displacememts to which fractured ribs are subject. In the *incomplete fractures,* when there is but a fissure in the bone, whether longitudinal or transverse, there is no displacement. M. Malgaigne broke off the inferior border of the rib with the blow of a hammer, and here there was displacement ; and he has a specimen of a fracture of the internal table and diploe, effected by himself, the external table being simply somewhat depressed opposite the fracture, a depression which would probably escape observation on the living subject. But the most important circumstance in this specimen is, that the anterior fragment of the inner table projects inwards about a line, and that this projection cannot, by any movement, be replaced. By compressing the extremities of the rib, so as to increase its curve, the internal fragment was in some degree replaced ; but whilst increasing the pressure, so as to complete the reduction, the external table was broken, and the fracture then rendered complete. A similar result was attained from fracturing the external table and the diploe, without injuring the internal table. A fragment projected externally, which could not be reduced by any means. M. Malgaigne has an anatomical specimen representing, he thinks, this fracture ; and he supposes that such an external projection might take place as to be evident, on examination, through the soft parts. The author forced in the seventh rib by a violent blow with a hammer. In the situation of the blow, an angular concavity could be felt, instead of a fracture : the internal table was broken in two points, separated from one another about two inches and a half, and the fragment resulting from this fracture was only adherent by its centre to the rib. Cheselden speaks of having found, in autopsies, upon the external surface of the ribs, an impression of the thumb and four fingers of nurses. It is supposed that the condition of parts may have resembled that just described. M. Malgaigne does not maintain that, even in multiple fractures of this kind, displacement always takes place. When

the depression affects several ribs, as happens from the wheel of a carriage, the diagnosis is immediately evident. A depression of various extent and size exists; and if, in examining it with the fingers, no projection of any fragment is felt, if the pressure increases for an instant the depression, without producing any projection, the existence of an incomplete multiple fracture of the internal table may be diagnosticated.

In the *simple complete fractures,* there may often be no displacement, when, for instance, the periosteum is untorn, or the fracture very serrated; but displacement as often occurs, although, frequently, not to such a degree as to be perceptible through the soft parts. Of such displacement, M. Malgaigne has described examples in his possession. In one case the posterior fragment projects inwards for nearly a line, and upwards in about the same extent. In a second, the displacement is of the anterior fragment, downwards and backwards about a line. A third shows a projection of the posterior fragment outwards. In one specimen, preserved by Dupuytren, several ribs are affected with simple fracture; the fracture is oblique, from one border to the other, but in opposite directions, and the displacement varies in consequence; thus, in the first of the broken ribs, the anterior fragment projects upwards; in the second, it is depressed beneath the posterior; and in the third, the displacement is similar to the first. In a skeleton, some of the ribs of which had been fractured during life, at about four fingers' breadth from their cartilages, the appearances were as follows: The anterior fragment of the fifth was carried inwards and downwards, the superior interosseous space being evidently diminished backwards; the anterior fragments of the third and fourth were depressed inwards; there was no displacement of the second, and the fracture could only be estimated by the roughness of the callus. Others have noticed such union as clearly indicated displacement: some attributed this to the treatment employed, the pressure recommended by Petit. But this explanation is inadmissible, as evidence of displacement exists when no such treatment was employed. Similar displacements are effected by blows upon the sternum and ribs of the corpse—experiments which have been frequently made by M. Malgaigne.

Multiple fractures. These, when complete, sometimes occur without displacement; more commonly there is displacement of one of the fragments, the other remaining almost in place; and sometimes all the fragments are simultaneously displaced. M. Malgaigne regards external violence and the configuration of the fracture, as the causes of the displacement. An external shock, for instance, partly fractures a rib: it acts first by thrusting it inwards; a greater force breaks the internal table and diploe, the denticulated form of the fractured surfaces prevents the return of the rib to its original position, and hence there remains a depression of the unbroken external table of the bone. Is the fracture complete? If the fracture is transverse and smooth, there is commonly no displacement, the bone returning, by its elasticity, to its original situation. But exception must be made for fractures occurring very near the sternum; partly in consequence of the ligamentous attachment of the ribs to this bone, the anterior fragment moving inwards and outwards, and which, when it has been carried inwards, has not, in consequence of the articulation, the elasticity of the posterior fragment. The case is similar, where a broken portion has become bent by a second fracture, either complete or incomplete; there remains no elasticity by which it may regain its position. When the fracture is oblique, the direction of its obliquity commonly determines that of the displacement. The denticulated extremities of fractured ribs are the most frequent among the causes of continued displacement: but with regard to fractures near the sternum, a special cause of displacement in a certain direction exists, and which also tends to reproduce displacement when it has been remedied. Pressure upon the sternum depresses the sternal portion rather than the other, and this pressure tends also to carry it downwards, motion in the two directions sometimes coexisting. This (the sternal) portion being depressed, the posterior fragment projects simply because it remains in its place. Decubitus on the back, a circumstance well deserving the attention of the surgeon,

augments this projection, the posterior fragment of the ribs being pushed forwards; and if the patient lie upon the fractured side, there is still greater projection. The nearer the fracture is to the sternum, the more evident are these circumstances, and most particularly in fracture of the cartilages. M. Malgaigne has found, in the last case, that by varying the pressure upon the ribs, the anterior or posterior fragment might be made to project; a fact from which he has derived a method of treatment, to be noticed.

The *diagnosis* must be inferred from what has been said concerning the kinds of displacement. It is frequently very difficult, and always requires very great care. There are some special causes of error, which should be borne in mind. The insertions of the obliquus descendens and serratus magnus muscles might give rise to the notion of displacement, in consequence of their abrupt projection beneath the finger, especially when pain causes any spasmodic contractions in these muscles; and in some subjects there are remarkable projections at the union of the cartilage with the bone of the rib.

Treatment. The treatment of fractured ribs is shown, by what has preceded, to be less simple than most surgeons have conceived it to be. The fractures without displacement require only to be kept at rest; those with displacement, and which are not disposed to be displaced when reduced, require reduction, in addition; and when there is a tendency to displacement after reduction, there is a third indication to fulfil, i. e. to prevent such secondary displacement.

1. *Means of keeping the ribs immoveable.* The rules laid down for using the bandage for the trunk are, that it is indispensable when it alleviates pain caused by respiratory efforts; that when there are no such pains, it is needless to employ the bandage; and that if pain continues notwithstanding its use, it is both useless and injurious. In individuals with a large chest and vigorous constitution, the circular bandage is safe. M. Malgaigne prefers the following mode of applying it. Surround the chest, first of all, with a common bandage, and apply over this a piece of cere-cloth (sparadrap), about three fingers broad, and sufficiently long to pass twice round the body. But in feeble individuals, with narrow chests, agitated by chronic coughs or paroxysms of asthma, the indication is to confine the constriction to the injured side; an indication which it is not easy to fulfil. Decubitus upon the injured side would be very useful, could it be borne: if not, a demi-cuirass, made by soaking a bandage in an amylaceous decoction, might fulfil the proposed indication. But on this point M. Malgaigne only throws out suggestions, not having made it the subject of experiment. But he tried, in the following manner, to limit the action of the thorax by bands of cere-cloth (sparadrap). The commencement of one band was applied on a level with the anterior extremity of the seventh rib of the right side, thence passed around the left side of the thorax, beneath the left scapula, and over the right shoulder: from this point it was passed a second time around the left side of the thorax, ending on a level with the crista of the right ilium. The costal respiration of the left side was thus evidently impeded, whilst it continued quite free on the right side. It would appear that the left ribs might be much more directly acted upon, by surrounding them with an oblique bandage, the two ends of which should cross one another at the right hip; but in this case the anterior part of the bandage, by compressing the abdomen, would interfere materially with the diaphragmatic respiration, which it is very important in these cases properly to manage. Or again, one side of the thorax might be acted upon by means of the spring of a hernial truss, the sternum and the spine being points on which the spring should press. A strap passing over the opposite shoulder might be used to support this, and, if necessary, a large vertical splint might be placed between the centre of the spring and the convexity of the ribs. This apparatus is applicable for the fulfilment of another indication, hereafter to be noticed.

2. *Means of reducing the displaced fragment.* In simple or double fractures, with depression of one fragment, the indication may consist only in elevating the depressed portion. But in some cases there is an actual projection of the other fragment outwards, produced by the bad position of the patient; but change of

position suffices to rectify this. With regard to the former indication, M. Malgaigne observes that he had frequently tried the experiment on the corpse, of pressing gently downwards the fragment which remained in its proper situation, until it came in contact with the depressed fragment. He found that the inequalities of the two broken surfaces fitted into each other ; and that, on removing the pressure, the elasticity of the rib brought back into its right position the former fragment, bringing the depressed portion with it. To effect this, certain conditions are necessary: if the fracture occupies the middle of a true rib, or is further backward, it is of little consequence which is the depressed portion ; if it is more anterior, the posterior fragment alone possesses sufficient elasticity to produce the above effect, so that, were this fragment itself depressed, it would not be readily elevated. With regard to the false ribs, whatever situation the fracture may occupy, the anterior fragment can only be elevated by means of the posterior. Fortunately, by virtue of this elasticity, the depression of the former is much more frequent than that of the latter. Two cases are related in support of these views of treatment, derived from experiment upon the corpse. In one of these, although the reduction was not accomplished, the manipulations caused a sudden and remarkable relief of pain, leading to the belief that some irritating portion of bone might have been removed from contact with the lung. Remarking on the cases alluded to, M. Malgaigne observes that it required but in a trifling degree to diminish the depression of one fragment to cause an instantaneous cessation of most acute pain, very probably by disengaging the lung from a fragment of bone which was pricking and irritating it, and bringing back the projecting piece beneath the costal pleura. It is to these depressed portions of bone that may be attributed the acute pains and the visceral inflammations which sometimes accompany fractured ribs ; and if it is remembered that, frequently, whether the fracture be complete or incomplete, the displacement may not appear at all externally, whilst there is a considerable prominence of a portion of the inner table of the bone, we may be disposed to regard this circumstance as of more importance than has hitherto been the case. Morbid anatomy confirms (although not with much proof) the above explanation. M. Malgaigne contends that the necessity is almost as great for removing fragments of bone from the lung, as for removing them when driven into the brain. He alludes to the various methods which have been suggested for effecting this object ; and he suggests the following : to take a needle, covered like a tenaculum, to plunge it as far as the superior border of the depressed fragment, and thence to pass it over the inner surface, almost as far as the channel in which runs the intercostal artery, employing the instrument then as a simple elevator. The incision may be thus avoided ; and such a puncture is very harmless.

3. *Means of preventing return of displacements.* In fractures near the sternum, there is actual danger of this occurrence ; and its causes are decubitus upon the back, and particularly on the injured side. The twofold indication is to keep the healthy side of the thorax forwards, so that the fragment which is attached to the sternum may be drawn in the same direction, and to keep up a constant pressure upon the portion which projects, equal in amount to the resistance afforded by the elasticity of the rib. The former indication is quite fulfilled in serious cases, by decubitus on the healthy side ; and then, also, the little disposition of the ribs to move would render the second almost useless. But in less important cases, where the patient wishes to move about, and to walk, the two indications are fulfilled simultaneously by a truss for hernia, with a long spring, one extremity of which presses posteriorly upon the projection of the ribs, on the sound side ; the other anteriorly, upon the posterior fragment itself. To obviate the injurious effects of prolonged pressure, compresses may be employed.

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Case of Tetanus, with Trismus, successfully treated. By Dr. SPÖRER.

GUSTAV GUSTAVSON, æt. 24, a coachman of robust make, was admitted into the Marine Hospital, December 11, 1831. On December 5th, when raising a heavy water-tub, he experienced a severe pain, extending from the scrobiculus

cordis to the umbilicus, and the whole length of the back from the upper cervical to the lower lumbar region: this was succeeded by trismus.　Having submitted to the action of the hot-air bath, which produced copious perspiration, and the application of eight cupping-glasses to the neck and back, he was so far relieved as to be enabled on the same evening to resume his usual occupation of driving. During the night he experienced occasional and slight attacks of both trismus and tetanus; which, however, ceased after a further profuse perspiration on the following morning.　During the succeeding day his avocation subjected him again to long exposure in the cold air, in consequence of which he was several times attacked by opisthotonos whilst seated on his coach-box.　On December 7th the symptoms became much aggravated, and he was then (at home) bled to a pound, and twenty leeches applied to the abdomen; a warm bath and frictions to the back were also employed, and some internal remedies exhibited, with the effect of again procuring mitigation of the symptoms: but, on the morning of his admittance into the hospital (11th), all the former symptoms had recurred with increased violence, accompanied by severe spasm of the dorsal, thoracic, and abdominal muscles: his face was distorted, his teeth clenched and grinding; the head and body curved backwards, and the belly drawn inwards and as unyielding as a board; pulse 88, small, and contracted; respiration short and gasping; bowels constipated during two days.　As inflammation of the theca vertebralis was presumed to be the proximate cause of this attack, the following treatment was adopted: twenty leeches were applied along the course of the vertebral column, and the patient afterwards placed in a warm soap-bath; a powder, of cal. gr. vj. cum rad. jalap. Əj., was administered, being passed through the intervals between the teeth; and, as no action of the bowels followed this before evening, it was repeated, and injections employed until at last two copious and fetid evacuations were procured.

On the following day (December 12th), the attacks were more rare, but still severe: he was ordered to take cal. gr. j. sextis horis, and the cupping to the epigastrium and between the shoulders was repeated.　On the 13th, he had passed a quieter night, and had perspired less copiously: this was, however, succeeded during the day by several sharp attacks of spasm, and the trismus continued unabated.　Dry cupping-glasses were then applied along the sides of the spinal column, and to the upper part of the abdomen; frictions were again employed, and the affected parts enveloped in oiled flannels.　On the two following days (14th and 15th), the symptoms became materially alleviated, and the calomel was then omitted.　Between the 16th and 18th, the opisthotonos subsided: the trismus, with some spasm of the scapular muscles, continued, but in a milder form.

After this report the secretions gradually resumed a healthy character, and by January 10th all muscular spasm had ceased, and he was discharged well.

In comparing the earlier and later treatment, Dr. Spörer takes occasion to give it as his opinion that, in the present instance, the employment of the dry cupping-glasses, oily frictions, and frequent employment of the warm soap-bath, materially aided in procuring a successful result to the case.

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On the Division of the Sterno-cleido-mastoid Muscle for the Cure of Wry-neck.
By Professor DIEFFENBACH.

THE great success of the operation lately introduced by Stromeyer for the cure of club-foot, has directed the attention of the profession to the benefit arising from the use of the knife in all cases of permanent contraction of the muscles.　Professor Dieffenbach gives, in the paper before us, the outline of thirty-seven cases in which he divided the sterno-cleido-mastoid muscle, in one of which only the operation was unsuccessful.

The operation is thus performed.　The patient being seated on a chair, one assistant draws the head towards the healthy side, whilst another depresses the shoulder of the affected side.　The contracted muscle is in this manner brought to stand further out, and is seized between the thumb and forefinger of the left hand,

and drawn powerfully downwards. A strongly-curved bistoury is now introduced behind the muscle, and pushed forwards till its point is felt beneath the skin on the other side of the muscle. The edge of the knife is then turned towards the muscle, and its fibres divided by withdrawing it, taking care not to injure the integuments. When the muscle of the left side is that which is to be divided, the knife is introduced in the triangular space formed by the two portions of the muscle about two inches above their insertion, and from this point first the anterior portion, and then, if necessary, the posterior portion is divided. When the contracted muscle is that of the right side, the knife is introduced between the trachea and muscle; the anterior portion is first divided, and then, from a second puncture between the two portions of the muscle, the posterior portion is separated. In the instant of withdrawing the knife the thumb is pressed firmly upon the wound, to prevent the extravasation of blood beneath the skin, and a compress is applied, which is retained in situ by strips of adhesive plaster and a bandage. Two cloths are passed round the neck, with a view to give support to the head, which is allowed to retain its wry position, partly in order to prevent the extravasation of blood, and partly to favour the reunion of the muscle.

In general the wound heals in a few days. There is generally some swelling over the part where the muscle was divided, and fluctuation is occasionally felt, owing to the extravasation of a small quantity of blood. In such a case the compress is applied more firmly, and stimulating embrocations are had recourse to. Sometimes, though very seldom, suppuration takes place; this accident calls merely for the evacuation of the pus, and the simple treatment of the wound.

In some of his first cases, Professor Dieffenbach employed various means of extension, to bring back the head to its natural position; but he afterwards found a stiff collar of pasteboard, so constructed as, from the uneasiness it produced, to force the patient to turn the head in the contrary direction, quite sufficient to restore the natural position.

We shall give one or two of the cases, taken at random, as illustrations.

CASE I. C. Meir, aged twenty-four, affected with congenital contraction of the sterno mastoid muscle, producing strongly marked scoliosis. When thirteen years of age he began to wear a mechanical apparatus, which he continued for some years, but afterwards gave up, as the scoliosis continued to increase. Both insertions of the muscle were divided, and a compress and bandage applied as already described. Neither extravasation nor suppuration took place. The patient remained in bed ten days; gentle extension of the neck was then employed, and in three weeks the cure was complete, and the position of the head natural.

CASE XV. Carl von Schuck, a very lively boy, had been treated according to the most approved system of orthopedy for a considerable time, without benefit. The muscle was divided; some days after the operation, fluctuation from extravasated blood was perceptible, but augmented pressure produced its absorption. At the end of six weeks the boy left Berlin perfectly straight.

CASE XXXVII. A boy aged twelve. The right sterno-mastoid was very much contracted, and the head in consequence approximated to the shoulder. This patient had already been operated upon according to the older method; the muscle had been laid bare and afterwards divided, but the contraction returned as soon as the wound healed. The muscle was again divided according to the same method, and although means of extension were had recourse to during the cure, the contraction again returned. According to the report of the father of the patient, this treatment occupied three months. Owing to the induration and adhesions produced by the two former operations, Professor Dieffenbach found it necessary to divide the muscle near its middle. The after-treatment was as usual; no means of extension were used, simply the pasteboard collar. No extravasation or suppuration followed; the patient was able to go out five days after the operation, and the head regained its natural position.

Of the thirty-nine cases, nine were owing to contraction of the left, and thirty to contraction of the right sterno-mastoid muscle.

Medicinische Zeitung, No. 27. 1838.

MIDWIFERY.

Case of Pregnancy of the Fallopian Tube. By Dr. BAMBERGER, of Berlin.

[We have already recorded several cases of this kind, (See particularly Vol. III. pp. 243-522,) but the interest of the subject is far from being exhausted.]

Philippine N., æt. 34, had spent ten years of a former marriage childless, and had already passed from three to four years of a second marriage without having a child. On the evening of the 4th of March, whilst playing at cards with a few friends, she suddenly left the room, and was found a few minutes afterwards sitting upon the sofa in another room, complaining of faintness and nausea, which she ascribed to a pain in the abdomen, which she had begun to feel about half an hour before. The tongue was coated, the pulse scarcely perceptible, and the face deadly pale. The pain in the abdomen was not very violent, and was accompanied by a bearing down in the rectum. The patient was disposed to ascribe her complaints to the delay of the menses, which should have appeared six or seven days before; the bowels were constipated, but the other functions were in a normal state. Vomiting ensued in about a quarter of an hour, and removed almost all the uneasiness, although the face still continued very pale, and the pulse was small, wiry, and quick. At eleven she went to bed, assuring her friends that she felt perfectly well. She could not, however, fall asleep, and the vomiting returned several times through the night. At four in the morning she complained of pain in the abdomen, especially in the gastric region. and of a feeling of tightness reaching from the stomach to the neck, which rendered every movement painful. The abdomen felt somewhat tense, and was painful on pressure, but the gastric region was more sensible than the parts below the umbilicus. The pulse was quick and wiry, and the cold perspiration stood on the forehead and limbs. As there had been no motion of the bowels, castor oil was prescribed, and an injection administered; cupping-glasses were at the same time applied to the abdomen. In consequence of these measures the tenseness of the abdomen was somewhat diminished; and another injection succeeded in producing motion of the bowels, and a quantity of hard scybala were passed. The condition of the patient, nevertheless, did not improve; small quantities of ice were now given to check the vomiting, and leeches were applied to the abdomen. She slept some hours during the night, but the vomiting still continued. At twelve she became very low, and one fainting fit succeeded upon another, till she expired about half-past seven in the evening.

On examining the body, a large quantity of blood was found in the cavity of the abdomen, and the left fallopian tube was burst about its middle by an ovum about the size of a pigeon's egg. The fœtus was not found in the ovum, and it had probably escaped into the cavity of the abdomen.

Dr. Bamberger was at first inclined to ascribe the symptoms to obstruction of the bowels; but he was afterwards obliged to assume the presence of internal hemorrhage, although he could not determine its cause. He appears to have suspected that extra-uterine pregnancy might have been the cause of the phenomena; but not to have attached much value to this supposition, as the pain was less acute than he would have suspected in pregnancy of the tube; and the characteristic cry, as described by Heim, (See Br. and For. Med. Rev., Vol. IV. p. 493,) was wanting. *Casper's Wochenshrift*, No. 39. 1838.

Two Cases of Episioraphy, to elucidate a Modification of the Operation. By Dr. FRICKE, of Hamburg.

CASE I. This woman had already been successfully operated upon about fifteen months before, on account of a considerable prolapsus of the uterus. About two months before her admission, on the 8th March, 1837, she had been delivered of a

full-grown child; but the accoucheur who had been called in to assist her had judged it necessary to divide the adhesions, consequent on the former operation, in order to facilitate labour. The natural result was a second prolapsus to an extent which prevented all exertion.

The edges of the labia were made raw and approximated to each other, and held in position by a number of sutures. The modification in the operation consisted in leaving a free space (in this case accidentally produced), of about half an inch in extent, at the anal commissure, by which the menstrual and other secretions could escape, without accumulating and causing inconvenience. Six weeks after the operation the woman left the hospital completely relieved.

CASE II. J. A., aged 41, admitted 6th July, 1837, had suffered during the last six years from prolapsus of the uterus, which followed on difficult parturition, during which the forceps were applied. The protruded uterus and vagina were about the size of a child's head; the mucous membrane of the vagina was smooth, dry, and leathery, excoriated in many parts, and covered with hard scabs. Several days' rest, and preliminary treatment were necessary before the uterus could be replaced; and seven days afterwards, the menses, which had not appeared for years, began to flow.

On the 22d August, the operation was performed as described in the preceding case, except, that here a space, sufficient to admit the finger, was purposely left free at the anal commissure. The union was complete in fourteen days, except a small part at the posterior edge of the wound, which speedily healed on touching it occasionally with caustic. The prolapsus was completely retained.

The advantages resulting from this modification of the operation, are:

1. It is less painful and is more quickly performed.
2. Local antiphlogistic remedies are more easily applied.
3. Injections into the vagina escape readily through the orifice.
4. Mucus and the menstrual fluid are not retained.

Zeitschrift für die gesammte Medicin. Band viii. Heft 2. *Hamburg.*

TOXICOLOGY.

Case of Poisoning by Arsenious Acid successfully treated by the Hydrated Tritoxide of Iron. By Dr. DEVILLE.

A young lady, in consequence of a disappointment in a love affair, determined to poison herself, and accordingly one night, a little before twelve o'clock, took (mixed in water) a considerable quantity of arsenic powder, which had been bought to destroy rats. The symptoms of poisoning commenced about one o'clock in the morning with vomiting, and she brought up part of the powder with some undigested food. Dr. Deville did not see her before four o'clock, A.M., when she had vomited several times, was suffering dreadful pain in the head and stomach, with burning heat in the throat, and seemed in a very dangerous state. She was immediately given a quantity of milk and linseed decoction, to encourage the vomiting and to assist the discharge of the poison; but this and other means failed to give any relief, and the symptoms became more urgent. Dr. Deville then determined to give hydrated tritoxide of iron; but as he had some difficulty in procuring this, it was half-past five before he returned to the patient. He immediately administered about half an ounce of the antidote by the mouth, and repeated this dose every quarter of an hour, so that by eight o'clock, A.M., she had taken more than half a pound of the iron. He then stopped, as the medicine had produced vomiting and purging, and the urgent symptoms seemed somewhat abated; twenty-five leeches were then applied on the epigastrium, with other general treatment, and the patient gradually recovered. In twelve days she was perfectly well. From a careful examination of the poison which remained in the glass, out of which she had taken it, and from knowing the quantity of the powder originally contained in the packet, Dr. Deville came to the conclusion that

56 grains of arsenious acid had been taken into the stomach, and remained there for above an hour; and though a considerable part (which was thrown away) might have been discharged by vomiting, still a large quantity, he conceives, remained in the stomach.

[The preservation of the patient's life, in the opinion of Dr. Deville, was incontestibly owing to the hydrated tritoxide of iron; but the case is open to considerable objections, for the greater part or the whole of the poison might have been discharged with the vomited matters, which unfortunately were not preserved. Six cases of poisoning by arsenic in the human subject, successfully treated by tritoxide of iron, by Messrs. Geoffrey, Bineau, and Majesté, are related in Vol. I. p. 572-3 of this Journal, where the mode of preparing the antidote is also mentioned. In Vol. I. pp. 594-5, and in Vol. IV. p. 237, are related several experiments on animals with the hydrated peroxide of iron, as an antidote to arsenious acid.] *Rev. Méd. Fran. et Étran.* Sept. 1838.

Toxicological Experiments, with Preparations of Chromium. By Dr. BERNDT.

I. *Experiments with bichromate of potash.* EXP. I. Fifteen grains of the salt, dissolved in 2 ounces of water, were given to a full-grown rabbit. Five minutes afterwards the animal took food; in twenty minutes the respiration became irregular, and thirst supervened. It now received a second dose of 15 grains, which produced very anxious respiration, and attempts, as it were, at vomiting, which were rendered abortive by the peculiar structure of its stomach. In about an hour and a quarter, the fore-feet were seized with trembling; in two hours the strength had sunk very much, and there was also incipient paralysis of the hind-feet. Death ensued in two hours and twenty minutes, with convulsions and evacuation of the fæces and urine. The body was examined two hours after death; the jaws were firmly closed; the cerebrum, cerebellum, and spinal marrow were gorged with blood, and somewhat softer than usual; the trachea and lungs were likewise gorged, the heart was flabby, and the right auricle was filled with fluid blood. The stomach was injected, its mucous membrane was partially destroyed, and its contents, when tested, showed the presence of chromium. The intestines were filled with mucus. The liver appeared softened.

EXP. II. A pigeon received 30 grains, made into a pill, with crumbs of bread, in doses of 10 grains, with an interval of half an hour between each dose. Soon after the last dose the animal became rigid, and made ineffectual attempts to vomit. It died in about four hours with slight convulsions. Its body was examined three hours after death; the body was rigid, the brain gorged with blood in a remarkable degree, and it, as well as the spinal cord, appeared softer than natural. The crop was injected, and contained nearly the whole of the pills as they had been swallowed; the stomach contained some chromium; the whole intestinal canal was reddened; the heart was flabby; and the lungs were gorged with blood.

EXP. III. A wound was made in the neck of a moderate-sized bitch, and 30 grains of the salt were introduced beneath the integument, and the wound was then stitched up. Frequent evacuation of the bowels and bladder followed in about a quarter of an hour, and immediately afterwards vomiting and trembling. At first the matter vomited consisted merely of the food; it then became mucous, and after some hours resembled the serum of blood. The usual reagents showed no indications of the presence of chromium. In eight hours the hind-feet were paralyzed, the fore-feet continued to tremble violently. The animal died in eleven hours. The body was examined ten hours after death; it was rigid, and had an unpleasant smell; the wound was dry, whitish, and contained a trace of the salt; the cerebrum and cerebellum were gorged with blood, and, along with the medulla, much softened. The lungs were filled with blood, as was also the right side of the heart. The stomach and upper portion of the intestinal canal, and the bladder, were reddened, but their contents showed no trace of the presence of chromium.

[Sufficient care does not appear to have been here taken in testing for chromium.

The metallic salts, it is known, are capable of forming definite compounds with animal and vegetable substances; and in such cases their presence cannot be detected by the usual reagents. It is necessary to destroy all traces of organic matter before any reliance can be placed upon the indications afforded by the reagents.]

Exp. iv. A dog, three months old, received 4 grains in half an ounce of water. In about half an hour vomiting ensued, and most of the solution was evacuated. The vomiting then ceased; the dog remained for some time very weak, but eventually recovered.

Exp. v. Three grains in powder were given to a frog. (In the experiments with frogs they were placed in water, but not deep enough to cover the head.) Vomiting ensued immediately, and part of the undissolved salt was evacuated; the vomiting, however, continued, and the animal died with convulsions in about an hour. The body was examined immediately; there was no rigidity; the brain and spinal cord were softened; the lungs were dilated and traversed by red vessels; the heart was flabby. The intestinal canal was not much injected, and the contents of the stomach showed the presence of chromium.

Exp. vi. A frog received 2 grains in pills. The consequences were similar to those of Exp. v.

Exp. vii. Five grains were dissolved in 4 oz. of water, and a frog was placed in the solution. In a quarter of an hour it became restless for a short time; in about an hour the restlessness returned, and continued to increase till, in about two hours, it attained its maximum. In eight hours spasms of the hind-feet came on, with retching and vomiting. It died in about twelve hours, and the body was examined ten hours afterwards. It was very rigid; the heart was flabby, and like the lungs gorged with blood. The brain and spinal cord were not examined.

Exp. viii. A frog was placed in a solution containing 20 grains to 4 oz. of water. The phenomena were similar to those observed in the preceding case, but more violent, and death ensued in three hours and a half. The brain and spinal cord were very soft; the lungs small and dark coloured, the heart filled with blood. The throat, stomach, and intestines were highly injected.

Exp. ix. A frog was placed in a solution containing 20 grains to 2 oz. of water. The results were similar to but more violent than those of the two preceding cases.

Exp. x. A frog was kept for forty-five minutes in a solution containing 20 grains to 2 oz. of water. It was then taken out of the solution, washed, and placed in fresh water. The removal produced no change in the phenomena, and the animal died in four hours.

Exp. xi. A solution of 10 grains in 3 drachms of water were injected into the jugular vein of a dog four months old. The animal cried violently and died instantly. The body was immediately opened: all the blood in the cavity of the thorax was found coagulated; the heart was very much dilated, and its right half continued to pulsate after the left had ceased. The blood in the brain was partially, in the abdomen not at all, coagulated.

II. *Experiments with the chromate of potash.* These experiments were conducted in a similar way to those already related; and the effects of the chromate resemble very nearly those of the bichromate. Perhaps the latter salt is fully more powerful than the former; but the details of the experiments are so much like those we have already given, that we think it needless to enter more fully upon them.

III. *Experiments with the protoxide of chromium.* These experiments merely prove that the protoxide is an inert powder.

IV. *Experiments with substances which it was conceived might prove to be antidotes.* These experiments consisted in first poisoning the animals with the chromate or bichromate of potash, and then giving carbonate of potash, sulphate of iron, or tincture of galls, as antidotes. These substances, however, did not in any way neutralize the effects of the poison, and we need not, therefore, detail the experiments.   *Medicinische Zeitung.* Nos. 24 and 25. 1838.

CHEMISTRY.

On the Pathological Alterations in the Constitution of Bones.
By Professor SEBASTIAN, of Groningen.

THIS short paper contains the results of the chemical analysis of various specimens of bones, derived partly from man and partly from the lower animals; some of them being healthy and others diseased. It appears from them, that the relative proportions of the animal and earthy constituents of bone are altered by disease, and that this alteration consists in the augmentation of the proportion of the animal matter.

Professor Sebastian's experiments were conducted according to the dry method of analysis, and the results obtained were as follows:

I. *Healthy bones of the lower animals.*

	Earthy matter.	Animal matter.
The long bones of the iguana contained	60.00	40.00
The ribs of the python	50.00	50.00
The shell of the land-tortoise	57.50	42.50
The opercula of the haddock	60.00	40.00
The furcula of a duck	55.00	45.00
The bone of the penis of a phoca	61.65	38.35
The bone of the penis of a trichechus rosmarus	56.34	43.66
The spinous process of a dolphin	60.00	40.00

II *Healthy bones of man.*

	Earthy matter.	Animal matter.
The humerus contained	63.34	36.66
The thigh	63.34	36.66
The tibia	63.34	36.66
The spongy substance of the same tibia	66.66	33.34
The bones of the skull (three experiments)	60.00	40.00
The skull of an ancient Greek, excavated at Athens	80.00	20.00

III. *Diseased bones.*

			Earthy matter.	Animal matter.
A thigh-bone thickened by lues venerea contained			60.00	40.00
A tibia	ditto	ditto	73.24	26.66
Another thigh-bone	ditto	ditto	60.25	39.75
A parietal bone	ditto	ditto	60.93	39.07
Another	ditto	ditto	56.52	43.48
A thigh-bone thickened in consequence of scrofula			56.93	43.07
An exfoliation of the tibia			60.87	39.13
An anchylosed portion of the knee-joint			56.25	43.75
An anchylosed portion of the spinal column			60.00	40.00
An exfoliated portion of the frontal bone			60.00	40.00
An exostosis of the skull			62.88	37.12
The callus which united the fractured neck of a thigh-bone			41.66	58.34
The callus of the os ilium of a woman			65.39	34.61
The upper fragment of a broken and badly-cured thigh-bone			57.82	42.18
The bent tibia of a man			62.00	38.00
The macerated shoulder-blade of a dolphin			56.66	43.34
The ossified cartilages of the ribs of a horse			54.54	45.46

Nat. Tijdschrift. I. 4. 1838.

MATERIA MEDICA.

Medicinal Properties of the Gray Oxide of Zinc. By Professor SEMENTINI.

FROM a series of experiments made on the white and gray oxides of zinc (the latter discovered by himself) Professor Sementini, of Naples, draws the following conclusions: 1. The oxide of zinc possesses tonic properties, which it derives from its soothing the irritability of the nervous system; it is also antispasmodic and sedative. 2. This has long been known, but the use of the medicine has been abandoned, from the inconstancy of its effects. 3. That inconstancy arises from the facility with which it absorbs carbonic acid, and hence passes to the state of a subsalt. 4. The *gray* oxide does not absorb the acid, and is therefore always of uniform strength. 5. As the properties of a tonic and a sedative coexist in it, it may be used with the greatest confidence in cases of *irritative debility.* The dose to begin with is from a fourth to half a grain, which may be increased to four or six grains, by an addition of a quarter of a grain every second day.

Giornale dell. Sc. Med. Chir. No. 45. *Marzo,* 1838.

MEDICAL STATISTICS.

REVACCINATION.

I. *Results of the Revaccination of the Prussian Army in* 1837.

THE number of troops vaccinated in this year amounted to 47,258. Of this number, distinct cicatrices of former pustules were visible in 37,299, indistinct in 6,903; and no cicatrices in 3,056. The pustules produced by the revaccination were regular in 21,308, irregular in 10,557, and no effect was produced in 15,393. The revaccination was repeated upon 12,014 of the abortive cases; successfully upon 2,243, unsuccessfully upon 9,771.

Of cases revaccinated in 1837, or at an earlier period, 14 had during this year an attack of varicella, and 7 of the varioloid disease; but there was no case of genuine smallpox.

The vaccine pustule was observed to pursue its regular course, in several cases where there were distinct marks of a former attack of smallpox; several cases of recurrent smallpox were likewise observed, and among others that of a soldier of the 40th regiment, whom, on account of the very distinct marks of the former attack, it had been thought unnecessary to revaccinate. A few cases likewise occurred, in which the vaccine pustule pursued its course simultaneously with that of other variolous eruptions.

The proportion of successful revaccinations has, as in former years, continued to increase. In 1833 the proportion was 31 per cent.; in 1834, 37; in 1835, 39; in 1836, 43; and in 1837, 45 per cent.

The total number of variolous diseases in the army during this year amounted to 94; viz. 46 varicella, 40 varioloid, and 8 genuine smallpox. The patients were chiefly recruits, and were attacked before an opportunity had offered for vaccinating them. Three fatal cases only occurred, and in two of these neither the cicatrix of the vaccine pustule nor that of natural smallpox could be recognized.

The beneficial effects of the revaccination will appear from the following data. In 1834, the number of cases of variolous eruptions amounted to 619, and the deaths to 38. In 1835, the number had diminished to 259, and the deaths to 5. In 1836, the total number was 130, and the deaths 9; and in 1837, there were only 94 cases, and 3 deaths. To understand fully the value of these figures, it must be borne in mind that during these years smallpox appeared rather to be upon the increase than decrease among the inhabitants of the country generally.*

Medicinische Zeitung. No. 27, 1838.

II. *Discussions in the French Academy.*

THE majority of the French Academy of Medicine disapprove of revaccination. M. Brischet, in his report to the "Institute," places the utility of revaccination

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* The results of the revaccination of 1836 are given in our Ninth Number, p. 210.

upon the affirmation of the two following propositions: viz. 1, the degeneration of the vaccine virus; 2, the failure, after a time, of the security afforded by it. Upon these two propositions M. Rochoux remarks:

" The hypothesis of the degeneration of the vaccine virus has found a recent defender in M. Guersent, and since it is continually reproduced, it should as incessantly be refuted. I am thus constrained to repeat, with respect to the first proposition,—the degeneration of the vaccine virus,—that every contagious virus is a production analogous, in some respects, to an organized being; especially in its susceptibility of indefinite reproduction, with all its specific characters. Such vitality has been manifested by the syphilitic virus for three centuries, and by the smallpox virus for upwards of twelve. The vaccine virus is governed by the same law. It may be stated, in consequence of its weekly propagation, since its first employment, to have passed through upwards of 2000 generations; and surely, had it been susceptible of diminution, it would long since have deposited all its power, though it should have lost it only by infinitesimal, homœopathic portions. I cannot, therefore, hesitate to consider that the hypothesis of the degeneration of the vaccine virus is completely disproved.

" The disproval, however, of the first proposition will not afford grounds for a satisfactory security, if the second be not disproved likewise; if, as Heim thinks, time would diminish, in the vaccinated, the power of resistance to the influence of smallpox. The number of subjects revaccinated with success in Germany has been brought forward to prove the temporary nature of the security of this operation.

Rocche mentions that . .	37	revaccinations took place out of		100
The Report to the Institute, 20,000	ditto	ditto		44,000
M. Bousquet 21,308	ditto	ditto		47,263

" It should however be observed, that revaccination tried in France has been attended by results very different from that in Germany.

" Since the introduction of vaccination into France, the number and severity of smallpox epidemics have progressively diminished; and the small number of the vaccinated who have taken that disease ordinarily suffer less than those whom it attacks a second time. So that if varioloid diseases have become, in the mean time, more frequent (a very questionable matter), it is but a slight evil in the place of a terrific scourge.

" Since the epidemic at Marseilles, in 1828, there have been counted 30,000 subjects vaccinated. Out of this number 2,000, that is, $\frac{1}{15}$, had been attacked; but the greatest part of them manifested only a varioloid disease, or smallpox almost uniformly benign. The number of deaths amounted to 20. Out of 2,000 more in the same town, who had formerly had the smallpox, 20 only, i.e. $\frac{1}{100}$, were attacked the second time; but amongst them the disease was generally severe, 4 deaths occurring out of the 20. While thus, from an equal number, there have been seven times more of the vaccinated attacked, these have had three times less the number of deaths.

" With facts so satisfactory as these, we have to meet in favour of revaccination the profound and significant consideration, that if it will do no good, it can do no harm! making uselessness the principle of our treatment. At this rate, a cap and bells may scare away smallpox; for, certes, if it does no good, it will do no harm! *Posito uno absurdo multa sequuntur.*

" The loss of all confidence in the beneficent measure of vaccination, and the spreading abroad, in consequence, an unnecessary terror of disease, are not the only evil effects of proposing its repetition from time to time This injudicious measure would prevent our ascertaining the precise value of the vaccine virus, since the preservative power given by the first vaccination might be attributed to the second or third; and, since there would be as little reason to trust *the second as the first,* the third as the second, instead of that tranquil confidence given by a knowledge of the permanent qualities of the virus, there must be excited a perpetual agitation and alarm at every approach of the uncontrollable and hideous disease—smallpox."

<div align="right">*Gazette des Hôpitaux. Octobre 2, 1838.*</div>

Influence of Artificial Feeding upon the Mortality of Infants.

IT would appear that the establishment of beneficent institutions in France, for the reception of illegitimate and deserted children, has not only tended to encourage profligacy, licentiousness, and cruelty, but has at length "fructified," after its own kind, in the production of still greater enormities. Such an evil tree could not but bring forth evil fruit

It was soon found in the Institutions alluded to, that the compassionate regulations of the "tours d'arrondissement," by which the wretched infants were sometimes enabled to obtain their natural food, and wholesome exposure to the air, so greatly increased the living burdens of the charity, that this mercy was withdrawn. And now the public are cooly informed of the statistical difference between natural and artificial feeding upon the mortality of infants; as if this artificial feeding had no cause in the moral wrong done to the infants by the prohibition of the only salutary course which had hitherto been open to them.

M. l'Abbé Guillard, chaplain to the General Hospital of Tours, states, in the hospital of X (which he deems it inconvenient to name), not a single infant has been suckled; all those who are received are nourished by hand, through a sucking bottle. In this hospital, a very exact account has shown that last year, out of 244 children, 197 had died at the end of the year! Of these, 116 lived only from a day to a month. Out of 127 infants in 1834, there remained only 29 at the end of the year. On the 1st of January, 1835, out of 362 infants, there remained alive only 127 at the expiration of twelve months.

The suppression of the "tours" has shown, also, in other hospitals the murderous effect of this probibition. Thus in the Hospital de Poitiers, where the habitual proportion of deaths, in the first month of life had been 12 to 100, have been now increased in that month above 35 in 100. In the Hospice de Loudun, 2 only out of 11 remained alive at the end of the year, and 4 out of 9 received in the first six months of 1835. These had been all artificially fed, and prohibited from being taken out

At Moulins, in the first months of 1835, 128 were admitted, and 100 of these had died.   *Bulletin Général de Thérapeutique.*   *15th to 30th Oct.* 1838.

II. THE AMERICAN AND COLONIAL JOURNALS.

MEDICINE.

Remarks on Pneumothorax, with cases, and an experimental enquiry into the causes of the metallic sounds heard in that disease. By JACOB BIGELOW, M.D., Professor of Materia Medica and of Clinical Medicine in Harvard University.

[THIS paper contains the detail of three fatal cases of pneumothorax, and of some experiments made on the bodies after death, with the view to ascertain the causes of the sounds observed in this disease. We have only room for the conclusions arrived at.]

From the foregoing experiments and cases (says Dr. Bigelow), we may infer that the following agencies are concerned in producing metallic sounds of the chest.

1. There must be a cavity, the walls of which are preternaturally susceptible of vibration. This takes place when the pleura is pathologically distended, so as to overcome the obtuse or muffling effect of the contiguous soft organs, such as the lung, diaphragm, and intercostal muscles. Some time is probably necessary to prepare the parts for this pathological resonance, since it fails to appear *post mortem* in healthy chests submitted to experiment. It should be added that when metallic sounds appear in simple phthisis, there are cavities of the lungs, the walls of which are in a state of tubercular induration.

2. The immediate or exciting cause of metallic tinkling, is a forcible or sudden

disturbance of the liquid in a vibrating cavity like that described. The explosion of bubbles of air from beneath the surface of the liquid appears to be the most common cause of such a disturbance; but it may also take place when a part of the liquid is thrown upward in the act of coughing, and falls back upon the remainder. The same occurs in succession of the chest.

3. The vibrations which yield metallic tinkling are transmitted from the liquid to the solid parietes, and thence directly to the ear, without any necessary agency of an echo, or reverberation of air in the cavity.

4. A minor or *submetallic* tinkling, having no musical resonance, may be produced by slight impulses given to the air in the cavity, such as the breaking of bubbles of mucus at orifices above the surface of the liquid.

5. Amphoric resonance is produced by reverberations of the air in a vibrating cavity, without sonific impulse of the liquid. The same is true of metallic modifications of the voice, and of the cough when there is no tinkling. Metallic percussion seems also to depend upon the vibrations of air independently of liquid, and may be produced in some other cases when we strike upon a tense cavity in which a certain quantity of air is confined.

American Journal of Med. Sciences. Nov. 1838.

PHARMACY.

Effervescent Magnesia.

This saline aperient, commonly known in connexion with the name of its inventor, as " Moxon's Aperient Effervescent Magnesia," has enjoyed considerable reputation from its peculiar gratefulness to a fastidious stomach, as a remedy in indigestion, heartburn, nausea, &c. The manner here indicated is that by which a preparation very similar to the original article may be made. It is the imitation of Mr. E. Durand.

> Take of Carbonate of magnesia,   one part.
>   Sulphate of magnesia,
>   Bicarbonate of soda,   } of each two parts.
>   Tartrate of soda and potash, }
>   Tartaric acid,

These ingredients must be perfectly dried by expelling the water of crystallization, then reduced to powder, and finally mixed together. Inclose in dry bottles, with good corks adapted to them, and seal with wax. If there be the least moisture contained in the mixture, carbonic acid will be generated, and bursting of the bottles will follow. *Dose.*—A tea-spoonful in half a tumbler of water, drunk in a state of effervescence.   *American Journal of Pharmacy. Jan.* 1838.

MIDWIFERY.

Obstetrical Enormity.

[The following case is related in a recent American journal, under the title of " Ramping Surgery !" We should have thought it fictitious, but for the narrator's giving his name and place of abode, viz. P. H. Hush, Oswego, N. Y.]

The woman was of middle age, good constitution, regularly formed. She was taken with labour for the fifth time, and after a lapse of several hours a seat was prepared on the side of the bed, on which she was placed. The husband, being seated, on examination found the right hand presenting. He made forcible extension on this, but could not succeed. The pains becoming insufferable, he noosed a piece of a bed-cord round the wrist of the child, and placing his foot against the bedstead and fundament of the patient, straightened back, with "*might and main*," till the arm gave way, letting the operator, with his chair, over upon the floor, the arm flying to the back side of the room. This rather damped his zeal, and he started after a regular accoucheur; but just as the latter arrived, nature had

expelled the fœtus without aid, by producing a spontaneous evolution, and giving the head a natural position. The child appeared large and sprightly. The father was directed to send immediately for a surgeon, to see what was to be done. He deferred eight hours (probably in hopes that death would aid in cloaking his infamy), at which time he called on me. I found the arm horribly mutilated; the humerus had given way one inch above the elbow-joint; the skin at the shoulders, the muscles, tendons, nerves, and blood-vessels, yielded at their weaker points; some oozing of blood. I amputated at the shoulder-joint, drew the integuments together, which united readily, and discharged him in fourteen days, well. He is now a healthy and sprightly child.

Boston Med. and Surg. Journal.   March 21, 1838.

III. THE BRITISH JOURNALS.

(FOR THE QUARTER ENDING FEBRUARY 28, 1839.)

ANATOMY AND PHYSIOLOGY.

On the Origin and Development of the Pulps and Sacs of the Human Teeth.
By JOHN GOODSIR JUNIOR, Surgeon, Anstruther.

[THIS is an elaborate and valuable paper, containing the result of much original observation, and establishing several facts in the physiology of dentition, previously but very imperfectly known. We gave some account of it in our Sixth Vol. (p. 583.) in our Report of the Newcastle Meeting of the British Association. In its present completer state we recommend it to the notice of physiologists. In addition to our former notice, we extract the brief statement of the conclusions to which careful observation of the whole process of dentition has led the author.]

Milk Teeth. 1. The milk teeth are formed on both sides of either jaw, in three divisions, a molar, a canine, and an incisive, in each of which dentition proceeds in an independent manner.

2. The dentition of the whole arch proceeds from behind forwards; the molar division commencing before the canine, and the latter before the incisive.

3. The dentition of each of the divisions proceeds in a contrary direction; the anterior molar appearing before the posterior, the central incisive before the lateral.

4. Two of the subordinate phenomena of dentition also obey this inverse law; the follicles closing by commencing at the median line, and proceeding backwards, and the dental groove disappearing in the same direction.

5. Dentition commences in the upper jaw, and continues in advance during the most important period of its progress. The first tooth germ which appears is that of the *superior* anterior molar, which precedes that of the *inferior* anterior molar.

The apparent exception to this law in the case of the inferior incisive has already been explained.

Permanent Teeth. 6. The germs of the permanent teeth, with the exception of that of the anterior molar, appear in a direction from the median line backwards.

7. The milk teeth originate, or are developed, from the mucous membrane.

8. The permanent teeth, also originating from mucous membrane, are of independent origin, and have no connexion with the milk teeth.

9. A tooth pulp and its sac must be referred to the same class of organs as the combined papilla and follicle from which a hair or feather is developed, viz. bulbs.

Edinburgh Med. and Surg. Journal.   Jan. 1839.

*An Experimental Enquiry into the Physiological Action, the Poisonous Proper-
ties, and the Therapeutic Effects of the Hydrocyanic Acid.* By HENRY
LONSDALE, M.D.

[THIS paper (which looks like an inaugural thesis, and would make a very good
one,) contains a good digest of our knowledge of this important subject, and also
some original experiments. The following extracts give all the more important
matter embodied in it.]

1. *On the Physiological Action of Hydrocyanic Acid.*

The experiments are divided into three classes. 1. Those made with the
diluted or medicinal acid of this country, which contained $3\frac{1}{2}$ per cent. of anhydrous
acid. 2. Those made with acid containing 12 per cent. of pure acid. 3. Those
with the anhydrous acid. Twelve experiments were made with the diluted acid
on dogs, cats, and rabbits.

From the above experiments (says Dr. L.) it may be safely inferred that the
diluted or medicinal acid does not kill by arresting the heart's movements, or, in
other words, does not produce death in the way of syncope. Since it is obvious
that this acid does not exert any special influence on the heart's action, we look
for some other explanation of the cause of death, which fortunately soon suggests
itself on a due observance of the symptoms. That it must act on the central organs
of the nervous system, the brain and spinal cord, is fully shown by the convulsive
movements, vertigo, tetanic spasms, loss of sensibility and volition. And that
coma is also the result of this action is readily apparent from the fact, that the
respiratory acts are performed slowly and imperfectly. It is believed, then, that
death takes place in the way of coma from the respiration being ultimately arrested;
and although the circulation continues for some minutes scarcely unaltered, the
venous blood gradually becomes impeded in its passage through the lungs, and
consequently the further progress of this fluid to and from the right side of the
heart is suspended.

2. Two experiments were made with the 12 per cent. acid. An aged bitch
swallowed twenty drops, and ceased to breathe within the minute. A large dog
formed the subject of the second experiment. An ounce was poured down his
throat: the contents of the bottle were scarcely emptied, when the animal cried
out and experienced convulsions, and in less than twenty-five seconds respiration
had ceased. The heart of both animals contracted regularly for three minutes.
Allowing the blood to escape from the *vena cava*, renewed the contractions some
time after respiration had ceased, in the first experiment, so late as the fifteenth
minute. In the second experiment the heart was more decidedly affected.

3. The acid I employed in the third class of experiments was made according
to Gay-Lussac's method; by decomposing bicyanide of mercury with hydrochloric
acid. The beak of the retort contained fused chloride of calcium and dry carbonate
of lime: the receiver was kept quite cool. On Mr. Kemp's authority the acid so
prepared was perfectly anhydrous.

These eight experiments with the strong acid offered the same results; the
symptoms bearing the closest analogy to those observed to follow the administra-
tion of the dilute acid, with the exception of its acting more energetically on the
heart in these last experiments: being satisfied that the pure acid administered
by the mouth, even in doses of twenty drops, though it enfeeble, does not destroy
the irritability of the heart or voluntary muscles.

From a careful review of the preceding facts, I am constrained to believe that
the immediate effects of the anhydrous acid are exerted on the brain and spinal
cord, and that it also indirectly enfeebles, to a greater or less extent, the contrac-
tility of the heart. Cases may occasionally be met with (but I feel assured that
they will be few in number) which may lead an experimenter to doubt the accuracy
of my conclusions; but I think I may venture to say, that, if he performs as great
a number of experiments with the substance as I have done, he will be satisfied
that such instances are rare, and must be ascribed to individual idiosyncrasy.

II. *Is Hydrocyanic Acid a Cumulative Poison?*

Dr. L. answers this question in the negative.

III. *Medico-Legal Questions.*

The examination of a medical jurist in a case of poisoning with this substance may be resolved into three questions. 1. What time elapses between the taking of the prussic acid and the first appearance of untoward symptoms? 2. Within what period does this poison prove fatal? 3. Are the symptoms induced in man by a poisonous dose of prussic acid always uniform and characteristic?

From a careful calculation of the ages, weight, &c. of several animals, and the doses administered to them as compared with man, I think it probable that a drachm of Scheele's acid would affect an ordinary adult within the minute, and a dose exceeding this, suppose three or four drachms, would exert its influence within ten or fifteen seconds. When the acid is stronger, and the quantity larger, we are pretty certain of its immediate action, and consequent annihilation of the sensorial functions.

There are records of cases of the human species poisoned by the prussic acid where death occurred as early as the second minute, and as late as the forty-fifth minute. Should proper measures be adopted for the recovery of those poisoned, it seems probable that those who survive the fifteenth minute may recover.

The loss of consciousness and voluntary motion, the slow, deep, and heaving respiratory movements, whilst the circulation gradually becomes enfeebled, the fixed and insensible iris, in short, all the characteristics of apoplexy, were observed in the lower animals, and the same were observed in the physician at Rennes. It is far from improbable that a person may have a dose of prussic acid given him, so proportioned as to induce a simulated apoplexy, which, if the medical man was unaware of the cause, might be mistaken for the real disease. For it must be remembered that when doses not rapidly fatal are administered, the convulsions and tetanic spasms soon subside, and the animal lies in the apoplectic state for some time. So far then there is some difficulty in the way, and a knowledge of the general symptoms would be inadequate. But there is one circumstance which has received no attention from medico-legal writers, and that is the exhalation by the breath of the acid vapour. This has been observed in the human species, and numerous animals experimented upon by me, as already mentioned, and certainly would be sufficiently characteristic of the poison having been taken.

With the view of ascertaining the duration of the odour after death, I caused several animals which had been poisoned by the acid to be kept in a room at the temperature of 50° Fahrenheit, during seventeen hours of the day, and others to be buried in light garden soil six inches below the surface. The results of these experiments (fifteen in number), which were tested by at least three individuals in each case, lead me to expect the odour as late as the eighth or ninth day after death, even where life is prolonged to the eighth minute after a dose of the hydrocyanic acid.

My chemical examination of the blood, brain, and contents of the stomach, according to the method recommended by Leuret and Lassaigne, leads to the following conclusion: that from the fourth to the eighth day after death, although the odour is sufficiently strong so as not to be mistaken, yet careful distillation and the usual tests fail to prove the presence of the acid in animals which have been kept in the apartment where they were poisoned.

IV. *On the Treatment of Poisoning with Hydrocyanic Acid.*

[After briefly noticing the more ordinary remedies, Dr. L. adds:]

Looking at the mode in which death takes place,—the continuation of the heart's action for a short time after the respiration has ceased,—the gradually increasing distension of the right side of the heart by venous blood, and then the final arrestment of the movements of this organ; the renewal of the contractions of the pulmonic heart after the withdrawal of a small quantity of blood from its auricle, are all circumstances of the utmost importance, as suggesting the principles of treatment. It has already been stated that the acid, although having a direct influence on the central organs of the nervous system, also affects the contractility of the heart, and that this effect on this organ varied from a slight diminution to complete suspension of its contractility, according to the amount of the dose and other

circumstances. In those cases in which coma is induced, without much, if any, diminution in the contractile power of the heart, the blood notwithstanding becomes congested in the right side of that organ, from the imperfect manner in which it is transmitted through the lungs, as occurs in all cases where the respiratory movements are imperfectly performed: bleeding from the jugular, by relieving the engorged state of the right side of the heart, may be expected to favour the remedial agent, such as dashing cold water upon the face, applying ammonia to the nostrils, &c. employed to revive the patient and cause him to breathe. It also appears that when the effects of the acid upon the heart are transitory, and produce only a temporary diminution of its contractility, the right side of the heart becomes engorged during the partial suspension of its movements, and that when it would renew its usual contractions, it is prevented from doing so by the mechanical distension of its walls. By opening the jugular, in these circumstances, we may hope to relieve the engorgement of the right side of the heart, and thus materially favour the renewal of its contractions.

[To put these theoretical opinions to the test, several experiments were performed by Dr. Lonsdale and his friends, on dogs, and with very satisfactory results.]

From these experiments (he says) I feel no hesitation in saying, what might indeed be inferred *à priori*, from an acquaintance with the physiological action of the poison, that bleeding from the jugular vein is of essential service in the treatment of poisoning with hydrocyanic acid. It evidently acts by unloading the congested cavities of the right side of the heart, which enables this viscus to renew its contractions until the coma subsides.

V. *Therapeutical Properties of the Hydrocyanic Acid.*
This section contains nothing new.

VI. *In what manner does Hydrocyanic Acid act as a Poison?*
In this section the author briefly notices the views of different authors, but arrives at no definite conclusion. I am willing to believe (he says) that, although the hydrocyanic acid is absorbed and carried into the circulation, its *modus operandi* upon the sentient extremities of nerves seems most probable.

Edinburgh Med. and Surg. Journal.   Jan. 1839.

Of a Peculiarity of Structure occasionally occurring in the Basilar Artery of Man. By John Davy, m.d., f.r.s.

Besides those peculiarities of structure of the basilar artery which are well known, there is one of not uncommon occurrence which, to the best of my knowledge, has not hitherto been noticed by any anatomist. It is a band in the interior of the vessel, attached to its side, and consequently intersecting it. It varies both in its dimensions and situation. I have most frequently found it near the junction of the vertebral arteries; very seldom near the commencement of the circle of Willis. Sometimes the band perfectly, at other times only partially, intersects the vessel. Sometimes I have seen it not more than one line thick, occasionally two or three lines. Its appearance, as regards its nature, has always been similar and most analogous to a fibrous structure. In every instance, I apprehend, it may be considered as congenital, and not the effect of disease.

Whether this peculiarity of structure has a decided use I am not prepared to say. In each instance in which a band or fibre presents itself, support is afforded, and additional strength is imparted. The band I have described, as occasionally occurring in the basilar artery, must necessarily have this effect. It was in the month of June last year that my attention was first attracted to the subject. Since that time I have availed myself of every opportunity that has offered to examine the basilar artery. In ninety-eight post-mortem examinations at which I have been present, made in the General Hospital at Fort Pitt, during the period, I have met with it in seventeen instances. In nine, death was owing to pulmonary consumption; in two, to malignant tumour; in the remainder, in each instance to a dif-

ferent disease. The ages of the individuals varied from 19 to 59; two were 25; two 35. In point of age there was no other accordance amongst them.

Edinburgh Med. and Surg. Journal. Jan. 1839.

On the relative [constitutional] Prevalence of certain Organic Diseases. By John Davy, m.d., f.r.s.

I am disposed to believe that, were the pathological anatomist engaged in extensive and minute research, to institute a series of observations on organic changes analogous to that which Sydenham conducted in ordinary maladies, he might arrive at the conclusion, that there are organic constitutions prevalent at times, not less than atmospheric, and which (however produced) may be as much concerned in the origin of chronic disease, as the atmospheric influences are in the acute.

I shall give, in a tabular form, some of the results of my experience bearing on this subject, drawn from my notes of the various post-mortem examinations which I have attended during a period of nearly eighteen years, namely, from May 1821, when I commenced the practice of making a note of every fatal case in which there was an examination of the body after death. My experience was chiefly confined to our military hospitals; indeed, at home it was entirely so restricted. On foreign stations it extended to the native population, especially in Malta, where the civil hospital offers an ample field for research.

Stations.	Years.	No. of bodies examined.	Instances of tubercles in the lungs.	Of ulceration of larynx with ditto.	Of ulceration of the larynx without ditto.	Of Pneumathorax.	Of varicose lacteals.	Of apertures in fossa ovalis.
England, Fort Pitt	1821	29	11					1
	1822	61	33	19			6	10
	1823	40	20	7		1		2
Ionian Islands	1824 { 10			2	1			
	{ 18	5			1			2
	1825	36	2	2				1
	1826	9	3					
	1827	33	8	1				3
Malta	1828 { 6							5
	{ 32	5	1				1	
	1829	19	4	1				3
	1830	41	5	1	1			9
	1831	54	19	3		1	2	8
	1832	55	8	1		3		7
	1833	49	17	9		1		5
	1834	57	15	5		3	1	5
England, Fort Pitt {	1835	10	4	1				
		31	20	2		2		1
	1836	72	49	18		1		8
	1837	81	50	15	1	5		8
	1838	43	45	11		1		3
Total*	18	786	308 / 323	108 / 99	4	19 / 18	10	82 / 81

On the results contained in this table, I shall restrict myself at present to a very few remarks.

The very large proportional number of cases in which tubercles were found in the lungs, viz. 39 per cent. of the whole, may excite surprise. I must confess it

* We have printed the totals as given in the Ed. Journal; but there are errors somewhere. If the number of individuals are correct, the totals should be as we have given them in the smaller figures.

had that effect on my mind, and the more so, as no doubtful instances were admitted. I rigorously rejected every example not coming under the denomination of the consumptive tubercle; that is, a tubercle, albuminous in composition; admitting of induration by boiling, as pointed out by Dr. Abercrombie, and of softening in the progress of disease, giving rise to vomicæ and excavations in the lungs. The melanotic tubercle was excluded, as also certain concretions more or less resembling tubercles, whether consisting principally of phosphate of lime and the other materials of bone, or of a nature approaching to cartilage. I may also remark, that no cases were admitted as supposed instances of tubercles, from the presence merely of cavities in the lungs. Cavities existing unaccompanied by tubercles were inferred to be examples of pulmonary abscess, of which several instances occurred.

No doubt the astounding frequency of tubercles recorded in the table, is partly owing to the description of cases sent to the General Hospital at Fort Pitt, where a considerable proportion of the whole mortality under observation occurred. But, making the most ample allowance on this account, I apprehend the conclusion is unavoidable, that the existence of tubercle is far more frequent than is commonly supposed, and the reported deaths from phthisis would indicate.

Of the four instances of ulceration of larynx unaccompanied by tubercles, the first was complicated with empyema and purulent effusion within the pericardium, to the extent of three pounds and a half; the second was associated with melanotic tubercles in the lungs; and the third and fourth were connected with smallpox.

All the instances of pneumathorax, with the exception of one, occurred in cases of tubercular phthisis, and originated in a communication of a valvular kind being established between the pleura and a bronchial tube by ulceration, commonly through the medium of a cavity. In the one exception, a similar communication was detected, the consequence of a partial destruction of lung from an abscess in the liver, penetrating and bursting into the lung through the diaphragm.

Of the large number of examples of aperture in the fossa ovalis, all were oblique, with the exception of three. Of the three direct, one was sufficiently large to admit the fore-finger, and two to admit the end of the little-finger. In neither instance was there the slightest appearance of the morbus cæruleus. The subject of the first-mentioned and most remarkable example was an old soldier, who for many years enjoyed excellent health. In these cases, it appears inevitable that there must have been an admixture of venous and arterial blood in the auricles. In the examples of the oblique passage, the probability is, that no blood flowed from one auricle into the other. In one instance, in which the oblique aperture was sufficiently large to receive the end of the little-finger, the right cavities of the heart were found distended with coagulated blood, and the left empty.

Edinburgh Med. and Surg. Journal.   *Jan.* 1839.

MEDICINE.

On Tubercles in the Brain of Children. By P. Hennis Greene, M.D.

[This forms another of those admirable " Contributions to the Pathology of Children," for which we have been, during the last two years, indebted to Dr. Greene, and which we hope to see made the foundation of a separate treatise. The present paper contains four cases, with the appearances on dissection. We can only find room for some of the *Remarks* appended to them.]

It is a curious point in the history of medical literature that, although tubercles of the brain constitute one of the most frequent and important affections of the nervous system in children, they have been neglected by all systematic writers on diseases of children, without exception. I am acquainted with almost every work of any reputation on children's diseases in all European languages, and cannot call to mind a single one in which even a few lines, much less a chapter, are devoted to the consideration of cerebral tubercles. This cannot arise from the comparative rarity of tubercles of the brain in children, for a long and laborious investigation of this interesting subject enables me to affirm that, in point of fre-

quency, they must be ranged next to hydrocephalus; and that for every three cases of the latter disease, there exists one of the former. On the other hand, tubercles of the brain are extremely rare in the adult subject. M. Louis examined 117 bodies of adults who had died of pulmonary consumption without meeting with more than one example; and all who have been in the habit of making numerous post-mortem examinations will remember how seldom this lesion of the nervous centres in adults presents itself to the pathologist. The theses of some of the French *internes*, however, contain a mass of valuable information on tubercles of the brain, amongst the best of which may be mentioned those of MM. Mitivié, Giraud, Tonellé, Leveillé, and Dufour.

Tubercles of the brain often exist without producing any disturbance of the cerebral functions, and are only discovered on examination of the body after death. Of this I have seen frequent examples. The foreign body may even attain a very considerable size without giving rise to irritation or inflammation of the surrounding nervous tissue; and unless situate in the neighbourhood of some of the principal nerves, or important divisions of the brain, the pressure which it must necessarily exercise seems, as it were, to pass unheeded by the centre of the nervous system. In other cases a small tubercle will excite more or less irritation and congestion of the surrounding substance, and develop a train of symptoms which, although frequently obscure, still present a certain character or order from which the nature of the lesion may be discovered.

In the present remarks I do not propose to enter, at any length, into the history of cerebral tubercles in children, but merely to direct attention to a few of the leading symptoms which presented themselves in the cases above described.

Headach, more or less intense, either perpetual or remittent, sometimes occupying the frontal region, at other times corresponding exactly with the seat of the tubercle, is a very frequent symptom. It existed in all the cases which I have related. In that of Masson, where the tubercle occupied the posterior part of the cerebellum, the headach was principally fixed in the back of the head and neck.

Chronic vomiting, occurring at uncertain intervals, and not apparently connected with disorder of the alimentary canal, is another symptom which constantly exists, and is of great value in the diagnosis of cerebral tubercle, when conjoined to headach and constipation of the bowels. The latter symptom is one to which too much attention cannot be paid. It may depend, of course, upon a variety of causes; but long-continued and obstinate constipation in children is generally, as far as I have observed, connected with some organic lesion of the nervous centres, and more especially with chronic meningitis or tubercle.

Some disorder of the motor power, manifested by irregularity of the gait, an incapability of harmonizing the movements, partial paralysis, or a contracted state of one of the limbs, often exists as a symptom of cerebral tubercle. It preceded the acute symptoms for some time in the case of Jane Masson; and I have frequently noticed a similar phenomenon both in cases of tubercle and of chronic meningitis, the forerunner of hydrocephalus. The intellectual functions are seldom disturbed at an early stage of cerebral tubercle; but as the disease advances, more or less change either in the temper of the child, the memory, or some other mental faculty, usually manifests itself; irregular accesses of fever (which is often mistaken for infantile remittent fever) occur, with delirium at night; and in some instances the patient is gradually reduced to a state of complete idiocy.

Tubercles of the brain in children commonly destroy life, either by inducing acute hydrocephalus, or by exciting inflammatory softening of the surrounding nervous tissue. Indeed, the relation between acute hydrocephalus and tubercle is much more close than has been generally admitted. On some other occasion I shall endeavour to determine the precise relation, by the statistical records which I possess; but my impression is that tubercles of the nervous centres exist in one fourth to one sixth of the cases of hydrocephalus which occur in children above twelve months of age.

The influence of age on the production of cerebral tubercle is very remarkable. On looking over a list of 42 cases which I have observed within a period of five years, I find that there occurred—

At the age of 1 year	1			38
2	11		At the age of 9 years......	0
3	5		10	2
4	5		11	0
5	8		12	1
6	2		13	0
7	5		14	0
8	1		15	1
	—			—
	38		Total...42	

Of 38 other cases which have been observed by different *internes* at the Children's Hospital, Paris, there were

At the age of 1 year	0			30
2	0		At the age of 9 years......	3
3	8		10	4
4	5		11	0
5	5		12	0
6	6		13	1
7	3		14	0
8	3		15	0
	—			—
	30		Total...38	

Hence, in a series of eighty cases, we find the maximum number to occur between the ages of two and four years inclusive. I have already shown, in another paper (*Lancet*, vol. ii. 1835-6,) that acute hydrocephalus occurs most frequently between the ages of five and seven years.

The diminution in the number of cases after the second dentition, which my own table exhibits, is very remarkable, and worthy of notice. Scarcely a case occurred after the age of seven years.

In the preceding remarks I have merely indicated a few of the leading points connected with a lesion which has been, as I have already observed, entirely over-looked by writers on the diseases of children.   *Lancet. Feb.* 16, 1839.

Attempt to cure Elephantiasis by the poison of the Rattlesnake.
By R. W. Clarke, Esq., Assist. Surg. R. N.

[This case is very remarkable, and merits record on many accounts. The minute accuracy of the details is much to be commended.]

Masianno Jose Machado was bitten by a rattlesnake, for the express purpose of being cured of elephantiasis and lepra. The individual who made this experi-ment* was a white man, about fifty years of age, of ordinary stature, stout, and rather athletic in form; temperament, sanguineo-bilious. The kind of elephanti-asis with which he was affected was that denominated by Alibert, E. leontina; it was in its second stage, and, according to the patient, no energetic measures had been employed in its treatment. Nearly all his body, as well as extremities, was insensible exteriorly; the cutaneous tissue was thickened, hard, its surface rugous, covered with tuberculous elevations, but none of them were ulcerated. Some pustules under the arms had a porriginous appearance. The characters of the disease were more apparent, and better developed on the face, the features of which were swollen, giving a disagreeable aspect, without, however, rendering it altogether hideous. On the extremities the skin and nails had begun to change in appearance, and the fingers and toes were altered in form. Whilst life and sensibility appeared almost extinct on the surface of his body, his interior yet retained the remains of his former energy, and he possessed a force of mind by no means common, and seldom found in one of his sad condition. Six years of

* The experiment was suggested by a case which had been reported from the interior, where an accidental bite of the rattlesnake had terminated favorably.

dreadful and incurable disease, and four of seclusion in the hospital for lepers, had made him look forward to death as the only termination to his sufferings. No danger counterbalanced, in his idea, the desire he felt to be freed from his disease; he willingly risked the remainder of a life, under its continuance, for the slightest probability of recovery; and no Stoic ever expired more undaunted and indifferent than he did when aware of the fatal effects of his experiment. No opinion had the least weight against the determination he had taken; nothing intimidated, nothing deterred him. Having obtained leave to quit the Lazarus Hospital, he resolutely repaired to the house of Sen. Santos, physician to the hospital, to offer himself to the fangs of the venomous reptile, whose bite sometimes destroys life in a few instants, causing, immediately, tremors, convulsions, and the blood to issue from the different outlets of the body, and even from the pores of the skin. Having signed a declaration that the act was voluntary, and that he himself was alone responsible for its results, he boldly introduced his hand into the cage of the deadly reptile; it at first appeared to avoid him; he advanced his hand towards the snake: it looked inoffensively at him, and began to lick his hand. Two minutes passed in this repugnance on the part of the reptile to bite him. He now provoked the serpent, and seized it in his hand forcibly, and it bit him between the articulations of the ring and little fingers with the metacarpus. The bite was inflicted at 50 minutes after 11 in the morning of the 4th September. He felt no pain when bitten, nor effects from the poison introduced into the wound; he only knew that he was bitten when it was announced by the bystanders.

His hand was immediately withdrawn from the cage; it swelled slightly, and a few drops of blood escaped from the wound, but he felt no pain. The man continued perfectly tranquil; respiration natural, and his pulse regular. Five minutes after the bite, a slight sensation of cold in the hand.

12, noon. Slight pains in the palm of the hand, which increased after some minutes.

17 minutes past 12, noon. The pain extended to the wrist.

20m. The hand swelled considerably.

30m. The pulse became fuller. The patient all this time conversed in a lively manner, and even laughed.

50m. A sensation of fulness in the course of the jugulars; some alteration in vision; formication in the face.

55m. The sensation of fulness extended to the sides and back part of the neck; the hand continued to increase in volume, and the pain extended two thirds up the forearm.

59m. Numbness over the whole body.

1h. 20m. P. M. Tremor of the whole frame; sensible to the touch.

36m. Cerebral disturbance; pulse more frequent: some difficulty in the movements of the lips; somnolency; sensation of constriction in the throat; pain more intense, and extending over the whole arm; increased intumescence of hand.

38m. Felt cold, and covered himself.

48m. Pain in tongue and fauces, extending down to the belly; increased pain and swelling in hand; coldness of feet.

2h. 5m. Difficulty of speech.

25m. Difficult deglutition; anguish; copious perspiration on the chest.

50m. Arms powerless; some drops of blood from the nose; increased anguish and inquietude; pulse 96.

3h. 4m. General swelling; involuntary groans; sensation of sinking.

8m. Pulse 100.

15m. Great pain in the arms; restlessness.

30m. Pulse 98; flushed face; continued bleeding from the nose.

35m. Drank a little wine and water without difficulty; his shirt was changed, wet with perspiration; intense redness of the whole body; some drops of blood escaped from a pustule under the arm.

4h. Pulse 100; redness of surface more intense, but of a darker hue, especially in the bitten limb; violent pains in superior extremities, preventing any rest, notwithstanding the exhaustion of which he complained; constriction of throat,

and breathing embarrassed; inferior extremities and belly as yet not exhibiting any particular phenomena.

50m. Pulse 104; great heat over the whole surface of the body; salivation.

5h. 30m. Pulse in same state; torpor. It is remarkable that the urine has all along flowed in great abundance; saliva viscid, of a dark colour, and expectorated with difficulty; great muscular prostration; frequent groans, caused by pains over whole body; respiration tranquil; pulse full; skin soft; increased tumefaction of bitten hand. In this state he continued till

7 P. M. Some disturbed sleep, with groans; he woke, and said he was free from pain in the arms, but had great pain in chest, and a feeling as of a knot in the throat; urine copious; deglutition very difficult; saliva viscous and white; sanguinolent fluid running from the nostrils; offered a drink of water, with rum and sugar, which he could not swallow.

8h. Sweating ceased; groaning not so constant.

30m. Passed urine.

9h. 10m. Passed urine; ceased to groan.

15m. Profound sleep.

10h. Administered the infusion of guaco; dose, three tablespoonfuls, with one of eau-de-luce, which patient refused, and took the simple infusion; sanguinolent secretion from the nose stopped; pulse regular; diminution of the tubercular elevations of both arms and face, presenting an appearance of erysipelatous redness.

20m. Patient passed about two ounces of tolerably perfect urine; remains more tranquil, and sleeps at intervals without groaning.

40m. Pains in chest diminished; pains in legs and feet, in which, until this time, there had been a sensation of death-like cold; pulse regular, 108; thirst; patient drinks water without difficulty.

11h. Takes four tablespoonfuls of infusion of guaco.

45m. Urine high coloured; drinks water easily by spoonfuls; pulse 119; the wounded hand and arm inflamed, and very painful; restlessness.

Midnight. Slept soundly, interrupted by eructations; pulse 112; passed urine.

30 minutes past 12. Patient very restless; his cries distressing; calls for religious consolation; refuses medicine.

40m. Again passed urine; pulse 116; sensation of great heat in the legs; desires the coverlet to be removed.

1h. Patient takes his medicine again; asks to be uncovered; passes urine; becomes more quiet.

15m. Passes urine; pulse 100.

40m. Takes a dose of infusion of guaco.

2h. Drinks three spoonfuls of water; sits up in his bed; every time he drinks, pain and restlessness increase.

10m. Passes urine.

30m. Takes his medicine; becomes more tranquil.

3h. Passes urine; the lower lip, which had been much swollen and inflamed, returns to its natural state; salivation ceases.

55m. Passes urine, the quantity always from ℥ij. to ℥iij.; is more tranquil; takes his medicine; pulse 110; involuntary movements of right thumb and left leg.

4h. Passed urine.

45m. Takes a spoonful of medicine; pulse 100; patient tranquil, and sits up.

5h. Passes urine.

30m. Passes urine; patient declares himself in great agony.

6h. Pulse 100; respiration free; frequent groans.

10m. Passed urine.

9h. 15m. Great prostration; convulsive movements of the lower jaw, as also of the lower extremities; urine bloody.

10h. Pulse accelerated and intermitting; increase of convulsions; diminution of swelling of limbs, and redness of skin; deglutition extremely difficult; respiration anxious. Applied blisters to the thighs; gave a spoonful of infusion of guaco.

50m. Convulsions diminished; administered enema of brandy.

55m. Cessation of convulsions.

11h. Remains in same state. Gave an ounce of oil of Laga, which he swallowed with difficulty.

30m. The patient expired.

In a few hours the corpse became livid and more swollen; at ten the following morning, eleven hours after death, the body was enormously increased in volume, and covered with red and livid spots, exhaling a fætor so insupportable as to preclude the possibility of an autopsy, as we desired.   *Lancet. Dec.* 15, 1838.

Revaccination at the Foundling Hospital. By W. B. HUTCHINSON, Esq.

I HAVE recently submitted 216 children at the Foundling Hospital to the test of revaccination; and, as this subject is just now creating so much interest amongst the members of the profession, it may be useful to lay before your readers the result of my observations upon these cases. Of these 216 revaccinated, 11 went through the different stages of regular cowpox, as if they had never had the disease, proving that in them the primary vaccine had lost its prophylactic power.

In 122 a spurious form of cowpox was developed, producing, in some, considerable local inflammation and constitutional disturbance. The irregular nature and progress of the spurious affection in all these cases proved that the constitution was still under the protective influence of the first vaccination.

In 83 no effect (more than slight irritation from the puncture) was produced, though many of these were revaccinated twice; thus affording negative evidence of the undiminished preservative power of the primary vaccine.

I was led, in the first instance, to recommend a general revaccination of the children, from observing that the arms of many of those who had recently arrived from the country (of the age of five years) presented very imperfect cicatrices; but I think that the following short observations will go far to prove that the condition of the cicatrix does not furnish any criterion whereby to estimate the success or efficacy of the early vaccination; and I feel justified in concluding that the intensity of the local inflammation produced by the vaccine virus bears no relation to its subsequent protective virtue.

Of the 11 cases revaccinated, in which all the steps of natural cowpox were regularly developed, 8 presented perfectly-formed cicatrices (some having four, none less than two); 2 presented no trace of a cicatrix; and I had an imperfect scar. The youngest of the 11 was aged five years, the oldest aged thirteen years. I selected three arms, in neither of which could any trace of a cicatrix be discovered (though the children were all carefully vaccinated when infants), and I revaccinated them twice with the greatest care from a fine arm, without any result more than a slight degree of inflammation in one out of the three cases. Being desirous of employing only recent lymph from the infant's arm (for the greater security of the children revaccinated), I had no extensive opportunity of testing the lymph of those cases of successful revaccination; and the few experiments which I did make were inconclusive.   *Lancet. Jan.* 19, 1839.

Observations on the Exhibition of Mercury in minute Doses. By ROBERT LAW, M.D., A.M., Physician in Ordinary to Sir Patrick Dunn's Hospital.

[THIS is a valuable communication, well deserving the attention of practitioners. The experience of every one of any standing in practice must have convinced him both of the carelessness with which mercury is generally exhibited, and of the great uncertainty of its effects under such circumstances. We have been long convinced of the impropriety of the large doses usually given of this medicine (as of many others); but we have nowhere seen the fact placed in so clear a light as by Dr. Law.]

There is not in the Materia Medica an agent whose just pretensions are more

compromised by a slovenliness and want of care in its exhibition than mercury. And although, in some cases, the peculiar circumstances under which the medicine is exhibited prevent the conditions of restricted diet and confinement being complied with; and, therefore, the physician prescribes it under disadvantages, of which, although he is aware, yet he cannot control them; still we believe, from the little importance attached to these conditions when they might be enforced, that most physicians have yet to learn to what extent they modify the action and effects of the medicine. Upon inattention to these circumstances we should charge, in many instances, the complete failure of mercury to affect the system; and in all, that when the system is brought under its influence, so much more of it is required to produce this effect. An anxiety to ascertain to what extent a due attention to these modifying conditions would influence the results of the medicine, led us to bestow a good deal of pains upon the subject. An hospital, of course, afforded the best opportunity for such enquiry, as there alone could strict attention to directions be ensured. To a single result of such enquiry will we advert at present, viz. *the very small quantity of mercury required to affect the system, when exhibited in minute doses at short intervals*. This quantity was much smaller than we could have had any idea of. The first cases in which we made trial of this mode of giving mercury were chronic cases, such as we felt would, without injury or detriment, await the result of our experiment. We made no particular selection of cases, but such as were labouring under affections which we ordinarily treated with mercury. We directed one grain of calomel to be mixed up with a sufficient quantity of extract of gentian to make a mass to be divided into twelve pills, one of which was to be taken every hour. We found, in some cases, salivation produced by twenty-four pills, or two grains of calomel; and seldom were forty-eight pills, or four grains, required to produce this effect. We would say, that thirty-six pills, or three grains, was the average quantity required to effect salivation. We exhibited blue pill in the same way, and found the mouth to become sore from six grains.

We have not yet tried it in primary syphilis. But this we have observed, that we have succeeded in bringing the system under the influence of mercury in a very short time by frictions of ten grains of the ointment. We have found one drachm divided into six parts, and one part rubbed in every night, sufficient to produce salivation.

[Several cases are given, illustrating the good effects of the remedy, employed in this manner; and, among the rest, two in which the constitutional effect was *postponed* by the patients taking a *larger* dose than was prescribed; in these two cases the medicine acted on the bowels. The following is Dr. Law's explanation of the facts.]

We conceive the efficacy of this mode of exhibiting mercury to depend not only upon its *remora* in the system being ensured by the smallness of the dose, but also, upon a succession of impressions being kept up by the exhibition of these small doses at intervals, not so distant as that the effects of the impression be passed away before they be succeeded by another; nor yet so short that the small doses, crowded upon each other, produce but one impression, and that one such as would result from a single dose, equal to the sum of the small doses.

[Dr. Law concludes as follows:]

It now remains to be established, if this effect from a small be equal to that produced by a larger quantity. Of this we feel quite confident, that experience will prove that all the advantage to be derived from the medicine is within the compass of a much smaller quantity than has hitherto been supposed, provided that small quantity be exhibited with due attention to circumstances calculated to promote its effect; and we would further expect that this more guarded exhibition of it would save us from the frightful mischief that we sometimes see following it when largely administered; and which sometimes suggest to us the question, if mankind would not have been benefited by an agent, capable of such mischief, never having been introduced into the Materia Medica.

On the Nervous Tremor of Children. By P. HENNIS GREENE, M.D.

I do not remember to have seen this affection of the nervous system described in any English work on diseases of children, while, by several foreign writers it has been confounded with chorea. There is, however, a striking difference between the two diseases. In chorea the movements are involuntary and distinguished by a great degree of irregularity. The patient finds it impossible to execute certain motions in a regular manner. In cases of "nervous tremor" the movements are also involuntary, but are far from exhibiting the characteristic irregularity of chorea. They are rather marked by oscillations occurring from above downwards, or from side to side.

[Three cases are given which appear to have been observed in a French hospital, the practice being inert. We extract some of the *remarks* on them.]

In the first case, which terminated fatally, the whole of the central nervous system was examined with the greatest care, but no lesion could be discovered. The disease was probably occasioned by mental emotion, but the presence of contracture of the limbs, with shooting pains, and pain along the spine, was calculated to mislead the judgment, especially as the child suffered under pulmonary consumption.

In the second case, the nervous tremor was evidently occasioned by the derangement of the system previous to the establishment of the catamenial discharge; while in the third case, the exciting causes of the malady were complex, the most manifest being the influence of lead. The treatment of this latter case was excessively timid and defective; had the boy been freely purged on his admission into the hospital, it is evident that all the symptoms of the complaint would have been speedily dissipated.　　　　　*Lancet. Dec.* 22, 1838.

SURGERY.

On the Formation of Moulding Tablets for Fractures, &c.
By ALFRED SMEE, Dresser at St. Bartholomew's Hospital.

[THE following proposal is ingenious, and seems to offer some advantages over other analogous materials employed in fractures and other surgical diseases.]

The importance of a substance that can be moulded accurately to any part of the body at a moment's notice, must be admitted by every member of the medical profession; yet many difficulties attend the formation of a composition which shall, at the period of its application, be so yielding and soft, that it may take an accurate cast of any part, and when dry, shall still retain the form given to it, and become sufficiently hard to resist external impressions, and at the same time shall be tough, elastic, and devoid of brittleness and much flexibility; and further difficulties present themselves where the capability of its being quickly dried is required. The advantage of lightness and cheapness is also a great desideratum.

As I had frequently noticed that the composition of gum arabic and whiting, when dry, possessed great hardness and toughness, and yet was so free from brittleness that it could scarcely be pounded in a mortar, I was determined to ascertain how far it would answer to make tablets, which might be used to form extemporaneous splints.

For this purpose a piece of coarse sheeting was copiously brushed over on one surface with a thick solution of gum, after which it was covered with a composition made by rubbing whiting with mucilage, continually adding the powder until the whole was of the consistence of a thick paste: a second piece of sheeting was now rubbed over on one side with the solution of gum, and the moistened side applied upon the composition with which the piece of sheeting had been covered, and we thus had two thicknesses of sheeting with an intervening layer of the composition of mucilage and whiting, the thickness of which may be increased or diminished as strength or lightness is desired. The whole was then dried, and formed a tablet about the thickness of slight pasteboard.

This experiment succeeded beyond my most sanguine expectations; for, whilst the tablet remained dry, it was exceedingly hard, and, when sponged over with a little warm water, became so yielding, that, by moulding it with the fingers, a cast could be taken of any part of the body. The hand and knuckles were defined with great accuracy, and I succeeded, by a little management, in taking a cast of the greater part of the face. It is sometimes advisable not to allow the substance to dry upon the part on which it is moulded; but after the depressions and elevations have been traced with the fingers, it should be carefully removed, and partially dried before the fire; and as soon as the texture is sufficiently dry to retain its shape, it may be placed near a stone, or even on the hob of a grate, without fear of corrugating or becoming otherwise deformed. In most cases, however, this drying is quite unnecessary, it being requisite only to envelope the moist tablet with a bandage. A cast thus taken is extremely hard and tenacious, so that when not much thicker than a wafer, it may be struck violently and repeatedly against any hard substance, and not be destroyed. It possessed but slight flexibility, and, after having been bent, it returned to its previous form, showing considerable elasticity. It was neither liable to be torn nor broken; and lastly, it possessed the advantage of lightness combined with durability. Whilst in search of a moulding substance, I thought it advisable to try various compositions, in order that the best might be selected, but none appeared so excellent as that last described.

Of all these preparations, and many others that were tried, few were applicable, and none in all respects equal to the composition of gum and whiting, both of which substances are always easily obtained, and have the additional advantage of cheapness. The solution of gum, which was found most adapted, contained 10 or 12 oz. of gum to the pint of water.

As far as regards the nature and texture of the cloth, it is to be remarked, that linen is stronger than cotton, and less liable to be torn, and therefore to be preferred. Of the various kinds of linen, none moulds so perfectly as moderately coarse old sheeting; for when the tablets were made of finer Irish, they were very inferior in this respect.

The application of these tablets is rather extensive; they may be used with great advantage for all fractures of the metacarpal bones; also for those of the forearm, or even for the humerus.   *Lon. Med. Gazette. Feb.* 23, 1839.

Case of Hernia successfully treated on Dr. O'Beirne's plan.
By J. G. Wilson, Surgeon to the Bristol General Hospital.

[This case contains no novelty to those who are acquainted with Dr. O'Beirne's valuable papers: we transcribe it for the benefit of those who are not.]

The case occurred in a sailor, æt. 34, subject to a chronic scrotal hernia: strangulation had existed about eighteen hours, when he was visited by Mr. Wilson. " When I saw him, his countenance was anxious; his pulse small and frequent; the tumour was tense, and very tender to the touch; and the skin of the scrotum reddened. He had hiccough, and retched or vomited incessantly; and he had not passed fæces for three days. I could not judge of the nature of what he vomited, as he discharged the contents of the stomach in a bucket of dirty water. I placed him on his back with his knees elevated, and immediately applied the taxis in the usual way, but without avail. I repeated it again and again, using as much force as I thought safe, and as much, indeed, as the painful state of the tumour would admit of, but all in vain. As the symptoms were now urgent, and evidently getting more and more so, I thought of removing him on shore, in order that he might be more conveniently situated for the operation, which I considered it more than probable he would have to undergo; but before doing so, I determined to try the plan of treatment proposed by Dr. O'Beirne, whose very interesting paper, in the Dublin Journal for September last, I had recently read. Accordingly, I procured an elastic tube, such as he recommends, thirteen inches in length; and having straightened it and oiled its extremity, I

introduced it into the rectum. It passed, with little or no obstruction, the whole of its length; but as no flatus escaped, I then attached it to the syringe, and threw up nearly a quart of water, in which two tablespoonfuls of common salt had been dissolved, with an ounce of oil added. This enema quickly returned; but as he was obliged, for want of better convenience, to use the bucket, I was unable to see whether much feculent matter had passed off. On his again lying down I applied the taxis, but no change was perceptible in the tumour. Feeling assured that I could have passed the tube higher had its length allowed me, I sent for the œsophagus tube of the stomach-pump, and introduced it with the same ease, more than three fourths of its length, taking care to pass it very gradually, and upon the least obstruction to attach it to the syringe, when one or two smart strokes of the piston, sending a jet of water through the tube, immediately overcame the difficulty, and allowed it to pass on with ease. When rather more than eighteen inches of the tube had been passed up, some flatus began to escape, and on examining the tumour I found it evidently less tense; the man expressed himself in some degree relieved, and the vomiting ceased. I had withdrawn the tube to allow him to pass off the water which had been injected to facilitate its passage; and this time I observed that nothing but the clear water returned. I then again introduced the tube to the same length, when flatus escaped through it and by the side of it. I then turned the patient on his back, and found the tumour was sensibly diminished, before I began to apply the taxis, and now, with very little difficulty, I was enabled to return the greater portion. About one third of its bulk resisted my pressure for a few minutes longer, and from its feel seemed to be omentum; but in less than ten minutes from the last introduction of the tube, the whole was reduced, and all the urgent symptoms ceased at once.

"The man now requested to be allowed to go to stool, and passed a large quantity of feculent matter." *London Medical Gazette. December*, 15, 1838.

Astounding Injury of the Brain recovered from.
By W. ROBERTS, Surgeon, Carnarvon.

[WE copy the following case as we find it in our contemporary, but we utterly disbelieve the facts to be as therein recorded: were they true, the narrative would entail lasting disgrace on all concerned in this horrid proceeding.]

Just seven years to this time I was sent for to attend a young man who had met with an accident in the extensive slate quarries of Mr. Ashton Smith, in this county; while stamping a rock the powder ignited, and the blast went direct to his face; both eyeballs were shattered to pieces, the scalp on the forehead very much lacerated, and above the inner canthus of the left eye was a small hole in the os frontis, fairly through into the brain: upon my arrival I found the person who attends the men at the quarries introducing a grooved director through this hole, and scooping the inside of the skull, bringing out some blackish sludge and a good deal of brain, both cortical and medullary part. *I must confess I had no great hopes of the patient's recovery, and thinking I could do no more mischief than had already been done, being also anxious to know if the brain possessed any sensitive power, I took the director and passed it, in a direct line, until it touched the os occipitis opposite, and then turned it round into different parts; the young man, being quite conscious all this time,* assured me it gave him no pain, and it was only at the hole in drawing out the instrument that he did feel pain. It may be necessary to observe, there was no pressure of the skull on any part of the brain, and no fracture, with the exception of the hole in the os frontis. After dressing the wounds, and giving general directions as to the after treatment, I took my leave, and was not sent for again; the patient got well without any unfavorable symptoms, and it so happened I did not see him from that period until a few months since. The person already alluded to assured me he repeatedly introduced the director afterwards, but it was not at my desire; *from the manner in which the instrument was used at different times, I am satisfied both the hemispheres of the cerebrum must have been broken down, and made a regular puddle of;*

notwithstanding, the young man has been in good health ever since, and not only that, but all the faculties of his mind are quite perfect, as well as his hearing, taste, smell, and feeling; his sight, of course, is totally destroyed. His neighbours have assured me that he is a sensible, shrewd young fellow, a good singer, and remarkable for his memory. I shall content myself by merely stating the facts of this case; what I have here adduced can be attested by living witnesses; the young man himself lives to tell the tale; his name is Griffith Jones; he resides at a small farm called Ty-du, within half a mile of the Old Inn, on the banks of the celebrated Lakes of Llanberris.   *Lancet. Jan.* 26, 1839.

On Encysted Dropsy of the Thyroid Gland, with a method of Operation and Cure. By CONGREVE SELWYN, M.D., Cheltenham.

[PRACTICAL surgeons are well acquainted with this form of bronchocele, although they are too apt to confound it, in treatment, with the common or *cellular* variety, as Dr. Selwyn terms it. In the latter, the specific effect of iodine is well known; in the former, this remedy is generally powerless. The author of this paper appears to have met with many cases of this disease during his practice at Ledbury, and recommends the seton as an infallible remedy.]

I proceed to the operation in this manner: An assistant grasps the tumour on both sides, pushes it forwards, and renders it as tense as possible; I then introduce, at one side of the tumour, a fine and small trocar, about two inches in length by one eighth of an inch in circumference, with a canula to draw off the fluid. In the first instance I used a probe, with a trocar point, to introduce the silk, but I have employed, latterly, a common stocking-needle, armed with one or two threads, and carried it through the canula and out at the opposite side. The period required for the cure is various, according to the bulk of the wen, the state of constitution, disposition to healing, and other obvious circumstances. I have never failed, as yet, by this plan of treatment in a single case. *Lancet. Dec.* 15, 1838.

MIDWIFERY.

Enormous weight of a Child at Birth.

[This case is recorded by J. D. Owens, Esq., Surgeon, Haymoor, near Ludlow. The child was born dead.]

The weight and admeasurement of the child, as taken ten hours after delivery:— The long diameter, from the occiput to the root of the nose, $7\frac{1}{4}$ inches; the occipito-mental, $8\frac{1}{2}$ inches; from the parietal protuberances, 5 inches; the circumference of the skull, $15\frac{1}{4}$ inches; the cirumference of the thorax over the xyphoid cartilage, $14\frac{1}{2}$ inches; the breadth of the shoulders, $7\frac{1}{4}$ inches; the extreme length, 24 inches. The weight seventeen pounds twelve ounces.

Lancet. Dec. 22, 1838.

ANIMAL CHEMISTRY.

Detection of Urea in the Blood of a patient who died of Cholera. By HARRY RAINY, M.D., Glasgow.

[This is an important communication, and highly creditable to the author. At the time of his analysis, Dr. R. was not aware of there existing any distinct account of urea being found in human blood, or of its precise quantity being determined; he has since found that Dr. Christian had obtained satisfactory evidence of its presence in dropsy. We quote only the chemical details of this case.]

During the whole progress of the disease the urinary secretion was nearly arrested, the whole quantity secreted during eleven days being only 36 ounces, including a small quantity found in the bladder after death. This gives an average of little more than 3 ounces in twenty-four hours. The urine coagulated by heat

After separating the albuminous matter, urea was detected in it by nitric acid, but the proportion was much smaller than in healthy urine. From this circumstance I thought it probable that urea had accumulated in the blood.

In order to decide this point, 4 ounce measures of blood were taken from the larger vessels and heart; it was partly fluid, partly in small coagula. As the serum could not be separated in sufficient quantity for examination, the whole was mixed with 12 ounce measures of alcohol, well stirred for some minutes, and then allowed to digest for a day at a moderate temperature. The albuminous and colouring matter was precipitated in reddish brown flakes. The alcoholic liquor partly floated on the top. The mixture being thrown on a filter of fine cotton cloth, 10 ounce measures of fluid passed through, by the aid of gentle compression, the rest being retained by the spongy precipitate. This filtered fluid was transparent and almost colourless. It was evaporated at a temperature not exceeding 160° Fah. During this process it became turbid, and deposited a considerable quantity of fluid oily matter, which was separated. When reduced to the consistence of a thin syrup it had a decidedly urinous smell; and a minute portion being tested, yielded distinct pearly scales with nitric acid and with oxalic acid. The syrupy fluid was still turbid, apparently from the presence of oily matter, probably phosphoric fat. In order to separate this matter the extract was diluted with a little water, to render it perfectly fluid. It was then agitated with a small portion of ether, which dissolved the oily matter, and left the watery fluid colourless and almost transparent. This fluid was again evaporated, at a very gentle heat, to the consistence of a thin syrup; and nitric acid being added, there was a slight effervescence, followed by a deposition of pearly crystalline scales. These being compressed between folds of filtering paper and dried, weighed $5\frac{1}{10}$ grains. They had all the characters of the nitrate of urea, and, according to Prout's analysis, may be considered equivalent to $2\frac{7}{10}$ grains of urea.

This quantity, then, was actually separated from 4 ounce measures of blood; but as the whole mixture of blood and alcohol measured 16 ounces, and the filtered liquor measured only 10 ounces, it is evident that the filtered liquor contained only $\frac{10}{16}$th of the urea present in the blood. From these data it will follow that the whole urea actually present in the blood amounted to $2\frac{7}{10} \times \frac{16}{10} = 4\frac{3}{10}$ grains, or rather more than one grain to each ounce measure of blood, without making any allowance for the small quantity remaining in the fluid, to which the nitric acid was added.

London Medical Gazette. Jan. 5, 1839.

NATURAL HISTORY.

On an Undescribed Species of Human Intestinal Worm.
By O'B. BELLINGHAM, M.D., one of the Surgeons of St. Vincent's Hospital.

THE species of intestinal worm which forms the subject of the present communication belongs to the genus ascaris, a genus formed by Linnæus, and adopted by all zoologists since. The following are the characters of the genus:—
The body is cylindrical and elastic, more or less attenuated at the extremities; mouth provided with three tubercles or valves; anus a little in front of the posterior extremity in the shape of a transverse cleft. Sexes distinct; genital apparatus in the female having its external opening about the junction of the anterior with the middle third of the body; male organ a double spiculum without any sheath.

Rudolphi has made three divisions of the genus. The first contains those species which are equally attenuated at each extremity. The second division includes those in which the anterior extremity is thicker than the posterior; and the third contains the species in which the posterior extremity is thicker than the anterior. Each of these three divisions he has further subdivided into the species in which the head is provided with lateral membranes, or what he calls winged, and into those in which the head is destitute of these appendages, or what he calls naked. Three species of the genus ascaris inhabit the intestines of the human subject. The ascaris lumbricoides belongs to the first division, in which the body is nearly equally attenuated at each extremity, and to the subdivision

in which the head is naked. The ascaris vermicularis belongs to the second division in which the anterior extremity is thicker than the posterior, and to the subdivision in which the head is winged. And the species, the subject of the present communication, (to which I have ventured to give the name Ascaris Alata,) belongs to the third division, in which the posterior is thicker than the anterior, and to the subdivision in which the head is winged. . . . . . .

The third species of the genus ascaris, which occurs in the human intestines, has not, hitherto, been described, (although it would appear to have been already observed in this country,) as yet I have met with it only once. It belongs to the third division in Rudolphi's arrangement, and to the subdivision in which the head is winged. From the distinctness of the lateral membranes of the head, I have given it the name of Ascaris Alata.

The two specimens which I possess are females; they are about three inches and a half in length; the greatest diameter, posteriorly, three quarters of a line; the shortest diameter, anteriorly, half a line. The body is cylindrical, of a dirty yellowish colour, marked with the four longitudinal lines, and with the transverse very close striæ, which we find in the other species; the anterior extremity is inflexed, the position straight. The anterior extremity is provided, on each side, with a very distinct semitransparent membrane, a line and a half in length, narrower anteriorly than posteriorly, which commences on each side at the tubercles of the mouth, and together give this part of the body a triangular shape. The three tubercles, or valves, which surround the orifice of the mouth, are prominent, small, but distinct; the diameter of the body very gradually increases from the anterior to the posterior extremity; its termination is conical, and at the very point is a small, dark-coloured spot. The anus is a little in front of the posterior extremity, on the abdominal surface; it runs transversely; is slightly curved, the convexity anteriorly; it is provided with two lips, as in the other species of the genus.

The only instance in which I have, as yet, met with the Ascaris Alata was on the occasion of my prescribing for a child, aged about five years, who exhibited symptoms of worms. I ordered some vermifuge medicine, and desired, in case any worms were voided, that they should be kept. A day or two afterwards, the specimens, from which I have taken the above description, and which had been expelled by the medicine, were brought to me; they were dead when I received them, and I could not learn that the child ever passed any since.

Although this species of intestinal worm had not been previously named or described, it would appear that one, closely resembling it, had been, as I have said, already observed in this country. In the fourth and fifth volumes of the " Transactions of the Association of the King and Queen's College of Physicians" is contained a very interesting case, in which great numbers of insects, and their larvæ, were passed by a female residing in the county of Cork: in several instances the Ascaris Lumbricoides, and a species similar in many points to the one I have described, were also voided by the same individual. Dr. I. V. Thompson, who examined and figured it, says " it resembles the ascaris of the cat, but may probably be a distinct species."

This species, the Ascaris Alata, is very distinct from the Ascaris lumbricoides of the human subject: in general appearance it is not unlike the Ascaris Mystax, which inhabits the stomach and small intestines of the cat; it differs, however, in having a greater diameter posteriorly than anteriorly, and in the lateral membranes of the head being broader in the Ascaris Mystax than they are in the species under consideration. There are some minor points in which they also differ which will be observed if we contrast the characters of the two species.

<div align="right">*Dublin Medical Press.* Feb. 20, 1839.</div>

[The above interesting communication is extracted from the seventh number of a new journal, now published every Wednesday in Dublin. It contains some valuable lectures and original papers, and promises to be a work of much interest and value to the profession in Ireland. It consists of a large sheet of sixteen pages, is stamped for the convenience of transmission by post, and the price is Sixpence.]

PART FOURTH.

Medical Intelligence.

THE OFFICE, DUTIES, AND QUALIFICATIONS OF CORONERS.

THE Coroner is an ancient officer in England. He is called *coroner* because he had principally to do with pleas of *the crown*, or such wherein the King was more immediately concerned. In this respect the Lord Chief Justice of England is the principal coroner, and may, if he please, exercise the jurisdiction of a coroner in any part of the realm. There are also particular coroners for every county in England, in some counties two, and in others a greater number. This officer is of equal authority with *the sheriff*, and was ordained, together with him, to keep the peace when the earls gave up the wardship of the counties. Through the culpable neglect of gentlemen of property, this office has, in later times, been suffered to fall into disrepute, and get into low and indigent hands. Although formerly no coroners were paid, and by the statute of Westminster 1, they were expressly forbidden to take a reward, yet for many years past they have only desired to be chosen for the sake of the perquisites, being first allowed fees for their attendance by the 3 Henry VII., c. 1, of which Sir Edward Coke complained heavily. Since his time, coroners' fees have been much enlarged. It is unnecessary for us to inform the public that until large fees became attached to the office of coroner, *lawyers* were not wont to crave election to it.

Coroners for *counties* (except where custom to the contrary prevails) are chosen by all the freeholders of the county. Formerly the county members of parliament were chosen by the same electors. Now, however, by the Reform Act, the franchise, as respects the election of county members, has been somewhat altered; other interests than *freehold* confer the right of voting for members for counties. The Reform Act having extended the electors of members for counties, it becomes irreconcilable that the election of coroners for counties should be by the *free-holders only*. The election for a coroner of any county renders it matter of duty, at least with the freeholders of that county, to consider whether it be indispensable that the gentleman to be elected should be of the legal profession; if it be indispensable that a coroner should be a *lawyer*, it would become the duty of the county freeholders to vote against the medical candidate, for they are bound not to elect an inefficient officer; but by no means follows that in the election of a barrister, or an attorney, a *lawyer* would thus be procured to fill the office. But very dangerous to the public welfare would it be, also, if lawyers *only* were deemed eligible for appointment to all offices connected with the administration of *justice*.

The peculiar duty of a coroner, the only one to which *especial* regard is had upon occasion of appointing him to his office, is to enquire, by a jury over whom he presides, concerning the manner of death when any person is slain, or dies suddenly, or in prison, within the circuit of his jurisdiction. Public decency requires that in all such cases the coroner should hold his enquiry with all possible speed; tenderness to the feelings of survivors prompts that such enquiry should not be unnecessarily prolonged. The manner of holding an inquest is peculiar, and perhaps unavoidably so: the constable of the district, so to speak, scrambles the witnesses together, and every one who imagines he has a tale to tell, either hastens to the coroner's court to offer it in evidence, or he keeps out of the way for a purpose of an opposite nature. It not unfrequently happens, that upon enquiries of this description no person appears to take part in the investigation; sometimes no witnesses are in attendance, except such as the constable has *in his wisdom* summoned.

It is manifest that in a court so convened, offering such imperfect assurance that the required witnesses are in attendance to give evidence, the witnesses cannot be held to that strict line of examination observed in superior courts, without

injury to public justice. On the contrary, justice seems rather to require that some latitude should be allowed to witnesses in offering testimony before such a tribunal. If this be so, and it is impossible to doubt the fact, who, we ask, can be so unfit for coroner as a crotchety and, perchance, legally speaking, a half-educated *attorney?* His strictness would be out of place and season, and tend rather to stifle than develop the truth; whereas, a *non-legal* gentleman, proceeding upon the enquiry in an intelligent, matter of-fact manner, would not let one feature escape him, in however undigested or irregular a form it might be presented to himself and the jury. If it be true that a gentleman of education can ably fill the the office of coroner, although not of the legal profession, it follows that *a medical gentleman is the most proper man for the office;* for can it be denied that, upon view of the body, he would approach his subject with an intelligence which would be of unspeakable advantage to public justice, almost forbidding the possibility of concealment in any case where death has resulted by other than natural causes?

Lancet. March 9, 1839.

[Our principal object in reprinting this note respecting Coroners and the Coronership, is to call the attention of our readers to a subject of great importance not only to medical men but to the community generally. The recent triumphant election of Mr. Wakley to the coronership of Middlesex, will give *action* to the opinion generally prevailing among the members of our profession, that this office should be always filled by a medical man,—or, at least, by a man possessing a competent degree of medical knowledge. In this opinion we entirely concur; and recommend our brethren to lose no opportunity of endeavouring to obtain coronerships in towns and counties, as they become vacant. We must, however, remind them that it is very far from being true that every medical man is qualified for being a coroner; on the contrary, we believe that mere medical knowledge, however extensive or accurate,—without some general knowledge of law, and familiarity with the practice of courts,—is almost as inadequate qualification for the office as was the mere law without any medical knowledge, according to the old system.]

" OFFICERS OF HEALTH" IN THE FRENCH PROVINCES.

As long as quacks and conjurors are permitted by law to impose upon public credulity, a manifest injustice will be suffered by regular practitioners. The labour, the time, and the expenses, which these undergo to qualify themselves to engage the confidence of the sick, are all rendered vain; inasmuch as the quack who starts before him professes to cure all manner of diseases *gratis,* i. e., without any expense to himself of labour, time, or consideration.

Officers of health, as they are called, have for a long time been established in the French provinces, and permitted to practise by virtue of a diploma given upon so slight an examination as amounts merely to an attestation of their incapacity. M. Sampicci has undertaken to expose this abuse; and, after stating the disadvantage under which a young and properly qualified practitioner would settle in one of the provincial towns, owing to the formal permission of those who were unqualified, he gives specimens of the kind of examinations to which the *officers* are subjected.

First Candidate (*Licensed.*)

Questions by the Examiners. What is opium?—Candidate. It is a juice.
Ex. A juice of what?—C. Of an Indian tree.
Ex. And of what family of trees?—C. (Hearing somebody whisper *pap.*) Of the family of the *Popes!*
Ex. Of which of them?—C. (Hearing another whisper papa*ver.*) Of the *green* ones. (" Des verts.")

Second Candidate (*Licensed.*)

Ex. How do you recognize a pneumonia?—C. By auscultation and percussion.
Ex. And what do you gain by that?—C. We percuss and we listen.
Ex. And after all what do you find?—C. We find a pneumonia.

Third Candidate.

Ex. Prescribe a diuretic draught.—C. Common water, 1 pound; powder of squills, 1 grain.

Ex. But this is not a draught ; it is a tisane which you have made, and moreover an homœopathic tisane.—C. We can diminish the dose (replied the candidate, who did not understand what was said.) However, this candidate was admitted, only cautioned (ironically no doubt) to be circumspect in his practice.

Fourth Candidate.

Ex. What disease most frequently succeeds to scarlatina ?—C. Every disease may succeed to it.

Ex. But is there not one in particular more liable to do so in this case ?— C. (Hearing some one whisper anasarca replied),—Nasarca.

Ex. What is that?—C. It is a long time since I dissected, sir.

Ex. Tell me what is an eruptive disease ?—C. It is an irritation of inflammation.

Fifth Candidate.

Ex. Are there not some hollow muscles ?—name some of them.—C. There are the thyroid and the kidneys, (a female accoucheur apprentice here whispered *la matrice ;*)—the candidate, who supposed that she was laughing at him, turned round and said aloud, " Madame, you may speak for yourself."

Bulletin Général de Thérapeutique. Oct. 15 *et* 30, 1838.

MEDICAL FEES IN AMERICA.

The following scale of charges, for professional services, was adopted by the Washington County (N. Y.) Medical Society in June, 1837.

	Doll.	Cts.			Doll.
Advice at office . .		50	Fracture, thigh and leg .	5 to 10	
Venesec., Ext. Dent., Cath.			,, all others .	. 2 to 5	
Emet., each . .		25	Compound do., extra—discre-		
Ordinary visit, under one mile		50	tionary		
For each additional mile,			Dislocation, hip .	. 10 to 25	
extra . . .		25	,, all others .	. 3 to 10	
Nocturnal visit extra		50	Compound do., extra—discre-		
Detention, per hour ',,		25	tionary		
Consultation ,,	2 to 5	0	Amputation of large extremities .		25
Obstetrics, ordinary, not over			Vaccination, single patient .		1
six hours . .	4	0	Paracentesis .	. 5 to 10	
Difficult—extraordinary cases			Hernia, reduction by taxis .		2
—discretionary			,, ,, by operation		20
Catheter, single introduction	2	0	Trepanning . .		20
,, each succeeding .	1	0	Lithotomy . . .		50

Boston Med. and Surg. Journal. Feb. 21, 1838.

MORTALITY OF INFANTS IN THE FIRST YEAR OF THEIR EXISTENCE. BY PROFESSOR RAU, OF BERN.

I. *Comparative Mortality of Infants.*

Of 2,808,139 deaths which took place in nine years, from 1820 to 1828, in the kingdom of Prussia, 751,077 were of children of one year old or less; that is to say, 26,944 in every 100,000. In Amsterdam, Paris, and in France generally, the proportion of early deaths is somewhat less formidable, as the following table will show :—Of 100,000 deaths,

In France, in 1802.	In Paris, 1818-21, 1826-28, (6 years	In Amsterdam, 1816, 1818-29, (13 years.)	
10,116	13,456	12,353	were of children under three months,
6,726	1,815	5,334	from three to six months,
4,615	3,531	5,048	... six to twelve ...
21,457	18,802	22,735	were of children of a year old or less.*

* Bickes. Die Bewegung der Bevölkerung mehrerer Europ. Staaten. p. 69.

Of 100,000 deaths,

In Sweden,	In Westphalia and Rhenish
in 1821-25,	Prussia, in 1820-28,
(5 years.)	(9 years.)
22,453	21,727 were of children of a year old or less.*

The mortality of infants is less in Paris than in France generally, on account of the number of foundlings who are removed into the country directly after their exposure at the Hôpital des Enfans trouvés: in the department of the Seine, in consequence of their thus being removed, the mortality is greater than in any other part of France.

From the above and other data, we learn that

26·69 per cent. of the deaths in Prussia are of children under twelve months.

21·72	......	Rh. Prussia and Westphalia	......
21·46	......	France	.. ...
29·45	......	the departm. of the Seine	......
22·45	......	Sweden	......
23·54	.. ...	Courland	......
18·80	......	Paris	......
22·74	......	Amsterdam	......
22·00	......	Philadelphia	......

According to Duvillard,† of 1,000,000 persons born in France, 767,528 only attain the age of a year. In the level provinces of Russia, 211 out of every 1000 die before the expiration of the first year; in Petersburg, 311; in Berlin, 276; in London, 320.‡

Of the whole number of children born,

23·24 per cent. in Paris die before the expiration of the first year.
20·02	..	Sweden.

20·02	..	Sweden.
33·33	...	the province of Kasan (in Russia).
21·10	...	Russia (in the level country).
25·6	...	Berlin.
32·00	...	London.
31·1	..	St. Petersburg.
16·65	...	Prussia.
17·6	...	Courland.

II. *Comparative Mortality of the Sexes.*

Of the 751,077 children under a year old who died in Prussia in the nine years, 1820-28, 415,305 were boys and 335,792 girls.§ In Courland, the proportion of male to female infants dying under a year old is as 53·1 to 46·9;‖ in Friesland, as 55·2 to 44·8;¶ in Paris, as 55·5 to 44·5.** The greater comparative mortality of male infants is in some measure only apparent, inasmuch as far more male than female children are born. It has been observed in Friesland, notwithstanding the disparity of male and female births, that at the age of forty the sexes were equal.††

III. *Comparative Mortality of legitimate and illegitimate Infants.*

In Prussia, in the six years from 1826 to 1831, 17·56 per cent. of the legitimate children died before attaining the age of twelve months; and so many as 26·46 per cent. of the illegitimate.‡‡ According to Ramon de la Sagra, the rate of mortality of the legitimate and illegitimate children in the isle of Cuba is as follows:§§

* Bickes, p. 69.
† Friedländer, de l'Education physique de l'Homme. 1815, 8.
‡ Erdmann.   § Bickes, p. 289.
‖ Bidder. Beiträge zur medic. Statistik Kurlands.
¶ Coulon. Statistik Frieslands.   **Frank, Med. Polizei, 795. Bd. v. s. 17.
†† Coulon. Op. cit.   ‡‡ Bickes. Op. cit. Appendix, p. 41.
§§ Historia Economico-Politica de la Isla de Cuba, &c. 1831.

	White Population.		Coloured Population.	
	Legitimate.	Illegitimate.	Legitimate.	Illegitimate.
In the first week	8·6 per c.	7·1 per c.	11·1 per c.	14·3 per c.
From a week to a month......	2·6 ...	6·5 ...	4·4 ...	5·0 ...
From one to two months	1·7 ...	2·8 ..	2·5 ...	2·2 ...
From two to three months....	2·7 ...	4·1 ...	2·1 ...	2·2 ..
From three to twelve months	11·4 ...	7·5 ...	13·9 ...	11·7 ...

IV. *Influence of the Seasons on the Mortality of Infants.*

The season of the year evidently exercises great influence on the rate of the mortality of children. According to Trevisan, of 100 children born in Italy in the winter, 66 die in the first month, and only 19 survive the first year: on the other hand, of 100 born in summer, so many as 83 survive the first year; of 100 born in the spring, 48; of 100 born in the autumn, 58.* In Belgium, the rate of mortality in the first month, of children born in January, compared with that of children born in July, is as 33·21 to 17·19.† According to the researches of Villermé and Milne Edwards, published by Dumeril,‡ the mortality of children is much more considerable during the three winter months than during the rest of the year in France, in the southern parts of which country it diminishes in March, but in the northern not till April. In Philadelphia, however, the rate of mortality is very differently affected by the seasons: the season most fatal to children is from June to September, and the least fatal season is from November to January.§ In the island of Cuba, the rate of infant mortality is not sensibly affected by the change of the seasons.‖

V. *Proportion of Still-births to the total Number of Births in several European Countries.*¶

In Prussia, it is........	3·29 per cent.	
Sweden	2·64	...
Saxony	4·43	...
Hanover........................	4·22	...
Mecklenburg Schwerin ...	3·70	...
Sleswick and Holstein......	4·60	...
Petersburg (1803)	0·20	...
(1806)	0·70	...
Russia generally	0·80	...

There are more still-births of illegitimate than of legitimate children: it has been calculated that, where 3·166 per cent. of the legitimate births are still-births, 4·959 of the illegitimate are still-births.

According to the calculations of Bickes, of legitimate male children, 3·559 per cent. are still-born; of legitimate female, 2·749 per cent.: whilst, of illegitimate male children, 5·277 per cent. are still-born; and of illegitimate female, 4·632 per cent.** In Leipsic, during twenty-five years, from 1801 to 1825, the proportion of still-born to children born alive was as 1 to 17⅔; in 1822, in the district of Liegnitz, it was 1 to 15; in Arnsberg, 1 to 28; in Coblentz, 1 to 27; in Elberfeld, 1 to 17; in Magdeburg, 1 to 18; in Dusseldorf, 1 to 26; in Minden, 1 to 37; in Stralsund, 1 to 44½; in Erfurt, 1 to 30; in Merseburg, 1 to 21; in Posen, 1 to 49; in Berlin (in 1821), 1 to 19; in Gotha, 1 to 10; in Paris (in 1822), 1 to 20; in Saarlouis, 1 to 16; in Vienna, 1 to 36⅓. According to Casper, the average proportion of still-births to living births is as 1 to 19.††

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*Ueber die unnatürliche Sterblichkeit der Kinder
in ihrem ersten Lebensjahre.* Bern, 1836.

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* Annali universali di Medicina, compilati da Omodei. Vol. xxxv. 1825.
† Quetelet et Smits. Recherches sur la Reproduction, &c. 1832.
‡ Bulletin des Sciences Méd. p. 188. 1829.
§ Emerson. Medical Statistics of Philadelphia.
‖ Op. cit. Ramon de la Sagra.   ¶ Bickes. Op. cit.
** Op. cit. p. 253.   †† Beiträge zur Med. Statistik, &c.

1. On Granular Degeneration of the Kidneys, and its connexion with Dropsy, Inflammations, and other Diseases. By Robert Christison, M.D., F.R.S.E., Professor of Materia Medica, &c. in the University of Edinburgh.—Edinburgh, 1839. 8vo. pp. 288. 8s.

2. A Letter to Dr. Chambers, F.R.S., &c. on several important points relating to the Nature and proper Treatment of Gout. By Sir Charles Scudamore, M.D., F.R.S., &c. —London, 1839. 8vo. pp. 59. 2s. 6d.

3. The Discovery of the Vital Principle, or Physiology of Man.—London, 1838. 8vo. pp. 566.

4. Elements of the Pathology of the Human Mind. By Thomas Mayo, M.D., F.R.S., &c.—London, 1838. 12mo. pp. 182.

5. Essays on the most important Diseases of Women. By Robert Ferguson, M.D., Professor of Obstetric Medicine, King's Coll. Lond.—London, 1839. 8vo. pp. 299.

6. On the method of Induction, and its results on Medical Science. An Introductory Lecture at King's Coll. Lond. Oct. 1, 1836.—London, 1839. 8vo. pp. 36.

7. Elements of Physiology. By J. Müller. Translated by W. Baly, M.D. Part IV.— London, 1838. 8vo. 4s.

8. An Exposition of Quackery and Imposture in Medicine ; being a Popular Treatise on Medical Philosophy. By the Author of "The Philosophy of Living ;" with Notes by W. Wright, Surgeon-Aurist. London, 1839. 8vo. pp. 259.

9. An Account of some Experiments on the Blood, in connexion with the Theory of Respiration. By John Davy, M.D., F.R.S. (From the Phil. Trans. Part II. for 1838.) —London, 1838. 4to. pp. 20.

10. Illustrations of Osteology. By Theodore S. G. Boisragon, M.D. Large Folio, 3 plates.—London, 1839. 6s.

11. Lexicon Medicum; or Medical Dictionary : containing an explanation of the terms in Anatomy, &c. &c. By the late Robert Hooper, M.D. Seventh Edition, revised, corrected, and enlarged, by Klein Grant, M.D., &c. — London, 1839. 8vo. pp. 1408. 30s.

12. Thoughts and Observations upon Pauperism, Poor Laws, Emigration, and the Prevention of Crime. By W. Fergusson, M.D., F.R.S.E.—London, 1839. 8vo. pp. 23. 1s.

13. Researches in Embryology. First Series. By Martin Barry, M.D., F.R.S.E. (From the Phil. Trans. for 1838.)—London, 1839. 4to. pp. 40. 8 plates.

14. Observations on the Comparative State of Medicine in France, England, and Germany, during a journey in those countries in 1835. By Dr. Adolph Muehry.

Translated from the German, by E. G. Davis, M.D. (From Dunglison's American Library.) Philadelph. 1838. 8vo. pp. 126.

15. A Discourse commemorative of Philip Syng Physick, M.D. By Chas. Caldwell, M.D., Louisville (United St.) 1838. 8vo. pp. 41.

16. On long-continued contraction of the Lower Extremities, from an affection of the Spine. By R. A. Stafford, Esq. (From Med. Chir. Trans.)—London, 1839. 8vo. pp. 26.

17. An Experimental Inquiry concerning the presence of Alcohol in the Ventricles of the Brain, after poisoning by that liquid ; together with Experiments illustrative of the physiological action of alcohol. By John Percy, M.D.—London, 1839. 8vo. pp. 112.

18. Vital Statistics of Glasgow. Statistics of Fever and Smallpox. By Robert Cowan, M.D.—Glasgow, 1838. 8vo. pp. 54. 1s.

19. Elements of Chemistry. By the late Dr. Turner. Sixth Ed. enlarged and revised. Part III. No. 1.—Lond. 1839. 8vo. 3s. 6d.

20. Illustrations of the Botany and other branches of the Natural History of the Himalayan Mountains, and of the Flora of Cashmere. By J. F. Royle, M.D., V.P.R.S., Professor of Materia Medica, King's College. Part X.—London, 1839. Folio. 20s.

21. Medical Portrait Gallery. By T. J. Pettigrew, F.R.S. No. 13. Containing Memoirs and Portraits of Boerhaave and Mr. Travers.—London, March, 1839. 3s.

22. On the Physiology or Mechanism of Blushing ; illustrative of the influence of mental emotion on the Capillary Circulation ; with a general view of the sympathies and the organic relations of those structures with which they seem to be connected. By T. H. Burgess, M.D.—London, 1839. 8vo. pp. 202.

23. Woman physiologically considered as to Mind, Morals, Marriage, Matrimonial Slavery, Infidelity, and Divorce. By Alex. Walker.—London, 1839. 8vo. pp. 464.

24. Vegetable Organography ; or, an analytical description of the Organs of Plants. By M. A. P. De Candolle, &c. Translated by Boughton Kingdon. With plates. To be completed in 16 parts. Parts I., II., 2s. 6d. each.—London, 1839. 8vo.

25. Illustrations of Cutaneous Disease. A series of delineations of the affections of the Skin, in their more interesting and frequent forms ; with a practical summary of their Symptoms, Diagnosis, and Treatment, including appropriate Formulæ. By R. Willis, M.D., &c. Fasciculi I. II. III., each containing 4 plates.—Lon., 1839. Fol. 5s.

[Want of room obliges us to postpone to our next Number, the List of Foreign Books received for review during the last quarter.]

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